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AMERICAN BEE JOURNAL

May 1941

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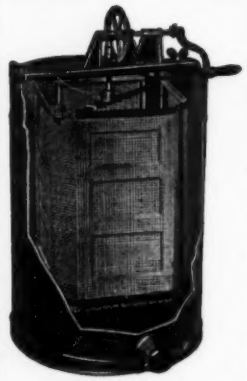

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(THE UNIVERSAL APIARIES)

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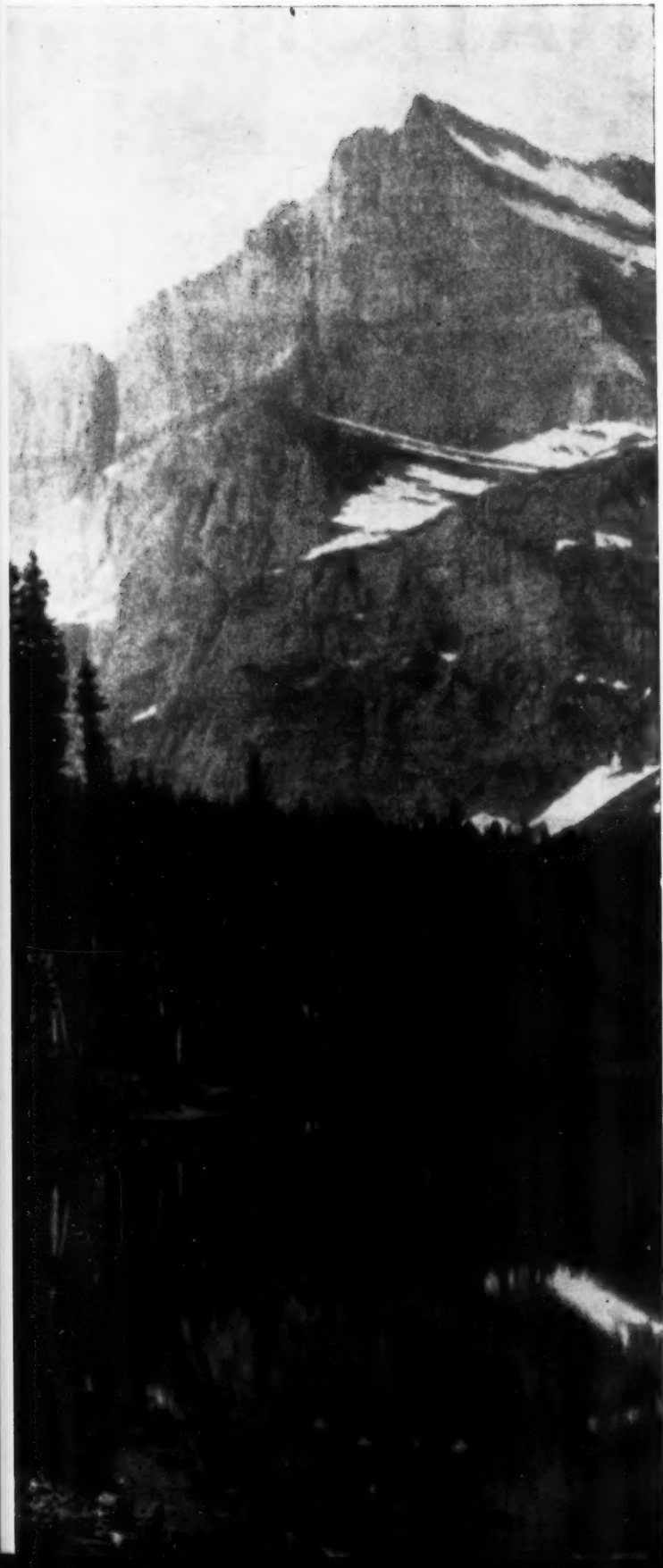
MAYHEW, MISSISSIPPI

AMERICAN BEE JOURNAL



EDITORS: G. H. CALE, FRANK C. PELLETT, M. G. DADANT, J. C. DADANT.

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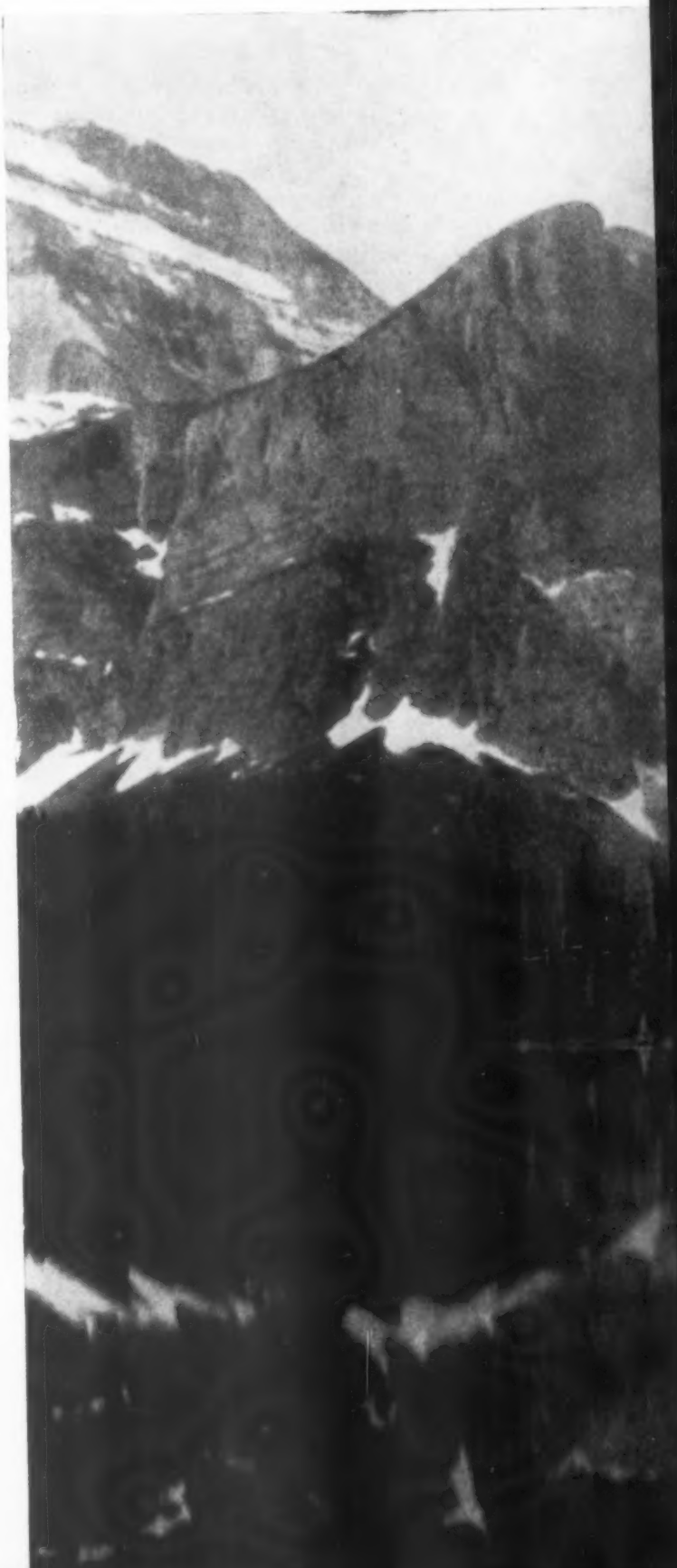


EDITORIAL

ADULTERATION

WHEN a misstatement is once started in the press it seems impossible ever to catch up with it. In June, 1881, a statement appeared in the Popular Science Monthly that comb honey was commonly made by machinery with the combs made of paraffin and the cells filled with glucose. The beemen were furious and large rewards were offered for a single instance in which comb honey had been successfully imitated. The rewards were never claimed, of course, but the statement has been repeated over and over again by those who should be sure of their facts.

Now the statement appears again. This time, of all places, in one of the food magazines where it can be most damaging. It would seem that such a publication would check the source of information when such a serious charge is made.

Any product by a machine is uniform in appearance with every specimen a duplicate of others turned out. Even the most superficial examination of comb honey shows that no two sections are alike. Comb honey is one of the safest of foods and one most difficult to imitate, yet those who should know better continue to throw doubt upon it.

Even if it were possible to manufacture comb honey in this manner the pure food laws would prevent its appearance in the markets. Adulteration of honey even in liquid form has almost entirely ceased because of the vigilance of officials charged with enforcement of the law.

♦

RISING PRICES

LETTERS coming to us indicate that many beekeepers are becoming discouraged because of the low price of honey and some are quitting the business. When the selling price of a product is at near cost of production with no profit in sight it is very difficult to be optimistic. We should bear in mind, however, that for every action there is a corresponding reaction and the lower the price goes on the decline the higher it is likely to go on the recovery.

Honey has been low in price many times before. The late C. P. Dadant once carried his honey in barrels for seven years because of the very low price prevailing at the time. Eventually he was able to sell at a profitable level. Fortunately honey is not perishable and when stored in proper containers can be kept for several years without serious deterioration.

There is every reason to believe that better prices are not far distant and we confidently expect that the beemen who carry on will soon find a good demand for their product at profitable prices. The man who expands operations when prices are low and demand is slow and then becomes conservative in boom times usually profits most in the long run.

♦

BETTER UTILIZATION NEEDED

IN view of the great advances in utilization of other farm products one begins to question whether we are not devoting too much attention to problems of production at the expense of utilization of honey. The improvement of stock, more efficient manipulation of colonies, and conservation of bees are all important because they assist in the increase of output. At present all our research staffs are working in this direction. Perhaps it would be better if some of them were giving attention to finding new uses and new outlets for honey.

Amazing things are happening in the dairy industry. We have thought of milk only as a source of food, yet strange new uses are coming to light. A strong and long wearing fibre is now made from skim milk. The writer has seen hats, clothing and even a necktie made from casein fibre produced by the dairy cow. Certainly such new products will add to the security and the prosperity of the dairyman.

Too much emphasis on increased production results in lower prices whereas attention to utilization has the opposite effect. Let us work for

more research on the utilization of honey before we start new projects intended to increase the output.

♦

NEED OF CHEAPER CONTAINERS

WITH honey selling at present low prices, the cost of the container consumes entirely too great a portion of the retail price. With a small item retailing for ten or fifteen cents the container and label may represent as much as one half.

Some years ago a beekeeper in New Zealand sent to this office a package containing granulated honey wrapped in glazed paper. Although it traveled many thousands of miles and crossed the tropics on the way it reached us in good condition and without any leakage.

The fact that honey could be shipped so far in such an inexpensive container made a strong impression in this office. It would seem that more attention should be given to containers for selling honey at retail. Certainly there is a great need to find some way to get small quantities of honey into the hands of the consuming public without doubling the cost by means of an expensive container.

♦

BEES IN THE NEWS

A newspaper reporter, after attending several beekeepers' conventions to report for his paper, wrote to this office that he thought the activity of keeping bees concerned itself principally with disease. Every speaker on the program at the first convention he attended, whether a visiting dignitary or a home producer, regardless of the subject on which he was announced to speak, always got around to the subject of foulbrood. The unsuspecting reporter in such a case is likely to make disease the principal feature of his report of the meeting.

This reporter suggests that the newspapers want constructive news about the industry and says that responsibility for so much unpleasant publicity lies with the beekeepers. He says further that the right kind of news will stimulate honey consumption and have a wholesome effect.

It is a good thing now and then to have a chance to see ourselves as others see us and this reporter who knows bees only from having reported beekeepers' conventions does a kindness in calling his impressions to our attention.

♦

BEES AS A BUSINESS

WHEN the late J. E. Crane was asked for his opinion of beekeeping as a business he told at length of his own experience. He stated that for many years with one assistant he worked five days each week and cared for 500 colonies of bees run mostly for comb honey. The average net return after paying for labor and supplies was about $2500 each year. By working six days each week instead of five he could have managed 600 colonies.

Concerning large outfits, Crane said that as the size increases the return per colony decreases so that the large outfit makes an unfavorable showing in comparison. He pointed out that the smaller outfit could increase the income through direct sale of the honey at retail prices or utilize leisure time with some other line.

The following is quoted from his statement:

"If one prizes health and a long life, if you love the great out-of-doors, the green fields and leafy trees, the song of birds and the joyful hum of bees; if you would study the grand panorama of the changing seasons, with the infinite variety of vegetable and animate life, the flowers and fruitage; if you would have a home all your own in some quiet nook where you may be your own master and live your own life without anyone to tell you what you shall do or not do, beekeeping certainly offers some attractive inducements. I think if I were to live my life over again I should keep bees."

Vandenberge display of honey and comb from Dadant's Crimp-wired Foundation, 4-H Club Achievement Day, Texarkana, Arkansas.

Fourteen Years of Constant Use . . .

I send you three combs by parcel post which have been in continual use fourteen years. Combs from Dadant's Crimp-wired Foundation are the strongest I have been able to produce, they came out of the extractor whole. Never put up a hive without full sheets of this foundation. I say this from years of practical experience. These combs are not stretched or out of shape. I would use Dadant's Crimp-wired Foundation if I had to borrow the money. I have found by test that one two-story colony with combs from Dadant's Crimp-wired Foundation is worth more than two with combs drawn from poor foundation.

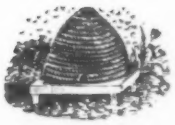
W. C. Vandenberge, Arkansas

For Everlasting Combs Use . . . Dadant's Crimp-wired Foundation . . . . . .

The cheapest way to get good combs that last a lifetime is to have them drawn from Dadant's Crimp-wired Foundation above the brood nest in a good honeyflow. The slightly higher cost per comb will be paid for many times each year in extra production. Combs that sag and stretch and buckle are expensive, no matter how little you pay for the foundation. Such combs go to the melting pot quickly and this means a ***double loss!*** Loss in replacement of the foundation by the beekeeper and loss in time and honey for the bees. Save from the start and use good foundation, Dadant's Crimp-wired.

DADANT & SONS, HAMILTON, ILLINOIS

Makers of Famous Foundations . . . . . Crimped-wired—Plain—Surplus



Guest Editorial
May Award Winner

THE GOLDEN AGE OF BEEKEEPING

By FRANK E. DEAN

IN the foreword of his "History of American Beekeeping," Frank C. Pellett alludes to a certain period as having been called the "golden age" of beekeeping. This period, he says, ended at the time of the World War, when the lure of high prices changed beekeeping from an interesting diversion to a business to make money and attain to a higher standard of living. At this point Mr. Pellett closes his fascinating book, leaving an appraisal of the post-war period to some future historian.

The age of gold had come, at least that was what many believed. An amiable gentleman, whose name is known and honored among beekeepers throughout the land, recently told me that he once thought he was going to get rich, but under present conditions he had narrowed his ambition to making a living, a living that did not include the latest model in motor cars. Both the golden age and the transient age of gold have taken their place in the realms of the past.

But the burden of this brief discussion is that the real golden age of beekeeping lies ahead of us and not behind us. Undoubtedly beekeeping has had an illustrious past. Away back in the dim ages of folklore and legend its fame begins. Great names, a vast literature, far-reaching discoveries and inventions have gathered about it in the long journey down to the present day. We rejoice in this heritage and accept the challenge to add to it something worth-while.

There are some handicaps. Honey is no longer the only sweet, but it is still the best one. Comb honey seems to be going and leaving a great void. It would be easy to argue that the extractor is not an unmitigated blessing; for when it came into use, honey lost its unique character and became to some extent just another carbohydrate. Comb honey may have a unique sales appeal, but it is not economical to produce. And the wax part of it is not in fact nutritious; nor is it, when abstracted in thought from the glamor of the honey filled comb, exactly tempting to the appetite.

The great handicap is the lack of consumer demand. The writer agrees with those who believe that the solution of the honey problem is more honey, and still more. Only thus will you get efficiency in production. Only thus will you correct some of the mistakes of marketing; as for example, putting a taste of honey into a tiny glass jar, the cost of the container being all out of proportion to the value of the honey. And this picayune marketing utterly fails to get real quantities of honey into the hands of the people. Hail to the new 5-pound glass jar, not forgetting the family size container, the grand old 60-pound can!

Millions of our vast population hardly know what honey tastes like. And millions more do not know its food value and how little it costs. Perhaps the only practical hope of reaching these millions is when we have more honey on our hands than we know what to do with. And the index of our success will appear when housewives begin to chatter, "How good honey is, and it's cheap, too."

More beekeepers are needed to contact new groups of honey users, particularly beekeepers of the interesting diversion class, hobbyists, if you please. The hobbyist is admittedly a good beekeeper. He informs himself, he is particular about his product, his children learn to like honey. It makes a fine gift for his friends, and so they, too, get to using honey and liking it. The rural schools, the state correspondence courses, the

(Please turn to page 240)

For The Best June Editorial

The winner of this months' editorial contest writes that in spite of the popularity of queens from resistant stock he will, thank you, take books. We are pleased to send them to him. This month, because of certain mechanical limitations of the magazine, it has not been possible to print the editorials of the three runners-up. They are: second, "Honey in Defense," by Wilbur L. DuBois; third, "The Bee Goes to School," by Chester A. Robinson; fourth, "A Quiet Life," by Burns McLennan. The announced awards of a five-year subscription to A. B. J. are made to each.

Next month try again. Awards will be six queens from disease resistant stock for the winning editorial and a five-year subscription to A. B. J. to each of the next three contestants, in order of excellence.

Only Lewis Hives Are

ROTPROOFED

All 10-frame Beeware bodies now ready for shipment have been rotproofed—a new Lewis improvement that controls decay of all exposed wood parts and repels termites. This exclusive Lewis advantage is apiary tested and equivalent to two coats of paint as a wood preservative. One coat of oily paint is recommended to prevent checking of wood grain but this rotproof treatment permeates the wood and makes hives last years longer.

As fast as possible in 1941 all Beeware bottoms, wood covers, metal cover rims and super shells will be supplied rotproofed at no additional charge. New facilities make this possible.

Every dovetail in every Beeware body, super or cover is ready bored for nailing as are all slotted bottom bars in Lewis frames. No charge is made for these exclusive Lewis features either. In addition you get the new metal frame rest which cannot bend out of shape even after years of use. Some Lewis frames are lower in price than in 1940 as improvements made possible by new manufacturing facilities partly offset advances in lumber costs over last year. Ask for our 1941 Beeware catalog.

Aeroplane view of enlarged Lewis plant at Watertown.

HONESTLY MADE——HONESTLY SOLD——HONESTLY PRICED

LEWIS BEEWARE

STANDARD OF THE BEEKEEPING WORLD

G. B. LEWIS COMPANY

Established 1863

HOME OFFICE AND WORKS: WATERTOWN, WISCONSIN

BRANCHES: ALBANY, N. Y. LYNCHBURG, VA. SPRINGFIELD, OHIO SIOUX CITY, IOWA

THE TIME HAS COME TO ACT

By T. W. BURLESON

LAST fall at Omaha at the meeting of Directors of the American Honey Institute, it dawned on me that the problem which we were discussing among us at that time was one in which every breeder of bees and queens, every honey packer, honey producer, bee supply manufacturer should face, and help solve if our industry is to grow and prosper as it so richly deserves to do.

Now what is this problem of such importance that it affects every member of the industry? I believe it may be stated best by paragraphs from a talk at the meeting of the American Honey Institute at Sacramento when I stated: "The most vital problem today is to create a more wide-spread demand for honey through publicity and advertising to reach the millions of families who do not eat honey regularly. Remember, most of them do not eat honey because we have failed to let them know what we know about honey. Much good work can be done by packers and producers and beekeepers individually, but it is my belief that the problem is so great that it can best be done cooperatively. In consumer demand lies the key to the price situation which we have encountered too frequently in recent years. In consumer demand lies the key to prosperity for beekeeper, producer, and packer alike. Even a moderate increase in the use of honey would result in raising and firming the price structure and in creating a better market for honey, for bees and for beekeeper's supplies, a situation we all desire—producer, manufacturer, and breeder."

In conclusion I said, "The time has come for us to look our selling problem in the face, to observe the fundamentals of successful selling in every branch of the industry, and to use for our industry those tools of merchandising that are available."

Now, those of you who read this, why do I say this problem of creating a greater consumption is your problem, why do I say the time has come for you to help your industry employ the tools of modern selling and merchandising? Because the prosperity of every beekeeper in the final analysis is completely dependent upon the prosperity of the honey industry as a whole. The various units in the industry have viewed their problems as their own. The producers themselves once they have disposed of their crop, think their job is done. The breeder has felt that when his package or when his queen found their place in the colonies of the producer, his job was done. Perhaps twenty years ago that might have been true, but it is not true today.

In the face of present-day competition employing modern selling and merchandising methods any industry in order to hold its market, in order to keep its surpluses at a minimum, to maintain its prices at profitable levels, must successfully and strongly sell and merchandise its products to the American public. In our case, the final product for everyone of us is honey.

For years we have faced contracting markets. Exports of honey a few years ago were more than 10,000,000 pounds a year, and this past year they were probably less than 1,000,000 pounds. During recent years domestic consumption fell off greatly due to the lack of selling effort and because of competition of other sweets and foodstuffs using that important tool—advertising. Production of honey too has fallen off during this period and that is a point of greatest importance to every one of us.

Why has production fallen? Simply because many honey producers have found they cannot make a profit at present prices. We all remember a few years ago when clover and alfalfa honey held firmly at 9 cents or better. We all know the price today. It will not average over 4½ cents. Just think of the millions of dollars of loss that reduction represents to thousands of members of the honey industry in every section of the country.

Unless we all make up our minds, the beekeeper, manufacturer, honey packer and breeder alike, to put our shoulders to the wheel and do our part to help turn the tide the other way, our business may become so unprofitable that we too will have to find other fields of enterprise.

Problems like ours have faced many industries and many of them have found the solution and turned the tide upward through cooperative effort. Always such co-operative advertising has had to be initiated and the brunt of the first effort borne by the leaders. We beekeepers know that this first hard step has already been taken.

The Hannagan Associates, of New York City, with $20,000 are already instituting the first national publicity ever promoted by the industry. That publicity is only the first step, and if you are familiar with advertising, you will realize that only the first step in a real campaign can be taken with such a sum. Ten times that amount will be needed to carry forward a campaign for honey of such proportions so that it will do a real selling job.

And remember that the entire $20,000 was raised by the efforts of less than twenty packers and producers in the industry. Only when the time comes that the wholehearted support and financial backing of everyone, every producer, every packer, every breeder throughout the country, is secured, will our industry be able to institute a real man-sized campaign and begin to turn the tide through increasing consumption of honey.

Let me deal briefly with some objectives toward which we will drive in such a campaign. Some time ago our advertising agency conducted a survey in a section of the country that Department of Agriculture figures show to be one of America's heaviest per capita consuming areas, to determine how many families actually used honey. The results showed that while approximately 21 per cent of the families interviewed used honey with some degree of regularity and usually kept it in the home, less than 10 per cent used it with sufficient regularity in cooking and on the table to insure the consumption of a good volume. It showed that 11 per cent of that 21 per cent used perhaps 3 to 6 pounds a year, primarily for table use, while only 10 per cent used honey for baking beans, making pies and cakes, for cooking in other ways that greatly boost the consumption of honey. I know of one case of a family that while they have used honey for years for hot cakes and waffles at the rate of 6 or 8 pounds per year, learned of the value and goodness of honey in cooking, and today that family uses from 1 to 3 pounds of honey every week. Just think of it! A few families swung from that 11 per cent occasional—user group into that 10 per cent regular—user group would increase the consumption by millions of pounds. To influence such a swing should be one of the objectives of our campaign.

This same survey showed that 42 per cent of the families did not use

honey at all, and 37 per cent used it seldom or occasionally, and did not keep it in the house regularly. A total of 79 per cent of the families interviewed knew nothing about honey. Of that 79 per cent less than 6 per cent had a definite objection to honey such as its taste, allergic or other qualities. The largest part of that 79 per cent market is waiting to be developed, and the same families have been sold on the health qualities of oranges, they have been told about walnuts, they have been sold tomato juice, they have been sold all manner of things and have spent more and more of our share of their food dollars on such items. In the field of sweets, they have been sold jams, jellies, candies, cane sugar, corn syrup, and dozens of items that have each gained for themselves a portion of our natural market and taken an ever increasing part of our share of their food dollars.

To sell them honey and to capture for honey its rightful share of that great market should be another objective of our campaign. I am firmly convinced that a cooperative national advertising effort designed to drive steadily toward these objectives will pay every one of us many times over and bring the answer to many of the problems with which we have been struggling for years.

As a member of the honey industry, as a beekeeper, honey producer, packer, and a breeder, I ask you to make this problem yours, and to make its solution your objective, so that when the time comes for you to do so, you will open your pockets and do your share toward carrying on the work now being started for the benefit of all of us.

Waxahachie, Texas.

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CROSS POLLINATION OF RED CLOVER BY HONEYBEES[1]

J. M. ARMSTRONG[2] and
C. A. JAMIESON,[3]

Experimental Farms Service, Ottawa

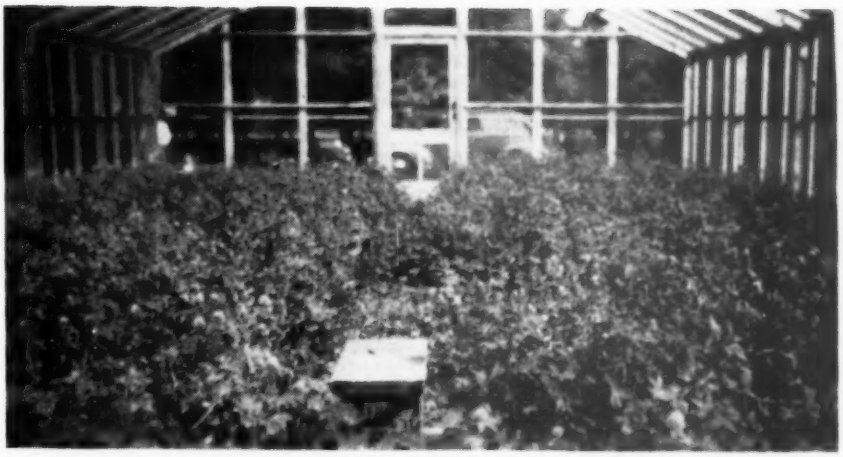
ACCORDING to a German legend, the good Lord willed that bees, like man, should rest on Sunday from their work. This command of the Creator, the bees in their excessive zeal disregarded overcome by temptation to gather the abundant honey of red clover. As a punishment God closed to them the blossoms of this flower and never again were they able to gather its nectar. This indicated that ancients were keen observers but in light of modern science their interpretation was wrong as we know the reason to be the excessive length of the corolla tubes. The beekeeper has always considered red clover as a potential source of honey. Unfortunately, from the standpoint of both the beekeeper and the seed producer, red clover blossoms are not foraged freely by the honeybee. Ever since red clover became established on this continent there has been considerable discussion in beekeeping journals of the possibility of finding a variety with a short corolla tube on which the honeybee might work.

Numerous investigations have been recorded on the behavior of the bees in visiting red clover and the fact that bees are capable of cross-pollinating it was demonstrated by Westgate and Coe (1), Richmond (2) studied red clover pollination by honeybees on the irrigated lands in Colorado. Here the yields were unusually high, 14 to 18 bushels per acre being secured. In these areas there is a great dearth of bumblebees and the honeybees are the main agency in pollinating the crop. In Scandinavian countries, where considerable emphasis has been placed on red clover breeding, the question of pollination of red clover has been investigated by several workers. Stapel (3) of Denmark observed that honeybees are more active on late-flowering than on early-flowering varieties of red clover. Experimentally, he was able to increase the pollen collecting activities of colonies placed in red clover plots by feeding them sugar solutions. Sylven (4) found honeybees visited red clover strains with slightly shorter corolla tubes more frequently than varieties normal in this respect. The studies of Valle (5) of Finland indicated that in that country as compared to bumblebees the honeybee activity was of two kinds. Some worked as pollinating insects while other individuals sought to obtain nectar from holes cut in the florets by a species of bumblebee known as **B. terrestris.**

Martin (6) gives the proboscis length of the bumblebee as 11mm. and that of the Italian honeybee as 6.5m. Martin calculated that to 6.5 should be added 1mm. for the distance the bee pushes her head into the top of corolla tube, and that 1 mm. should be deducted from the length of corolla due to the nectar height. The final effect would be that a honeybee could secure nectar from a corolla tube 8.5 mm. long and so the search for a short corolla tested variety of red clover still goes on. Recently two strains, Zofka and Kellner appeared to solve the problem and seed of these were secured from Mr. Frank C. Pellett. Zofka, an early double-cut variety originated by Dr. N. Zofka, Bohemia, was selected with the object of securing a strain with short corolla tubes. The Kellner strain was selected from Zofka by Mr. Kellner of Bohemia. It differs little from Zofka, being slightly more uniform for corolla tube length.

The relative seed production of these new strains compared with a standard variety, Ottawa, an early, double-cut variety which was produced by the Division of Forage Plants, Central Experimental Farm, Ottawa, was studied under controlled conditions. The three varieties which differed in respect to corolla tube length, were grown in a screenhouse. When there was a fair amount of

1. Contribution from the Forage Plants Division and the Bee Division, Experimental Farms Service, Dominion Department of Agriculture, Ottawa, Canada.
2. Assistant (Alfalfa and Clover), Division of Forage Plants.
3. Assistant Research, Bee Division.



Interior view of screenhouse showing clover in bloom and a colony of honeybees on the path.

bloom a small colony of bees was placed in the house and left there for the duration of the blooming period. The bees were restless for a few days and then adapted themselves to their confined environment.

The range of corolla tube length in Ottawa extended from 8.0 mm. to 11.8 mm. with an average of 9.66 mm. In Zofka the lengths varied from 5.5 mm. to 10 mm. with an average of 8.11 mm., and in Kellner from 6.2 mm. to 9.6 mm. with average of 8.10 mm.

Data on the mean number of seeds per head show that Ottawa yielded an average of 39.5 seeds per head while the other varieties yielded less than half that amount. Part of this difference was due to the fact that Zofka and Kellner heads contained less florets than did Ottawa. Some plants were strikingly poor in this respect, especially in the Kellner strain, possessing heads with less than 30 florets.

The data was examined critically to answer the question of whether the bees showed a preference for plants with short corolla tubes. Four plants of the Ottawa strain had a corolla tube length of 8.5 mm. or less. These plants set seed exceptionally well, the average for the four being 61.5 which is 50% higher than the average for the group. One plant with a corolla tube length of 8.0 mm. set 89.6 seeds per head which was the highest for any plant in the screenhouse. It is perhaps significant that the plant with the shortest corolla tube in the variety under test gave the best seed-setting.

Of the Zofka plants 71.1% of the population possessed corolla tubes 8.5 mm. or less in length. The difference in the seed production in the classes above and below 8.5 was very slight. On the other hand, however, the best seed producing plant in this group had a corolla tube of 9.3 mm. in length indicating that corolla tube length is not the only factor entering into the setting of seed in red clover.

In the population of Kellner 78.9% of the plants possessed corolla tubes 8.5 mm. or less in length. Here again the seed production of the two classes of plants with short and long corolla tubes is very similar to that of Zofka except the four best plants of this group possessed short corolla tubes. In this variety there was a higher proportion of plants that set very little seed.

The results of this experiment supply some evidence that red clover plants with short corolla tubes are superior in seed production to normal plants when subjected to the cross-pollinating agency of the honeybee. Certain factors operate against obtaining conclusive evidence. A proportion of the field bee population would be active in the collection of pollen where the length of the corolla tube is immaterial. Pollen collectors might, therefore, impose a certain level of seed production on all plants in the population. Then again there were variations in the number of florets per head on the same plant and from plant to plant. The effect of the first type of variation was eliminated by taking 10 heads from each plant but no allowance was made for the second source of variation. The height to which the nectar rises in the corolla tube is another variable factor which might affect the bee activity. This subject has never been critically examined, although different investigators have reported that the nectar varies from 1 to 4 mm. It is possible that when conditions for nectar secretion are favorable, nectar might be available on plants possessing corolla tubes with a length of 8.5 mm.

This experiment also confirms the findings of Westgate and Coe (1), Richmond (2) and others that honeybees can be forced to cross-pollinate red clover. There is considerable evidence to support the belief that this cross-pollination is voluntary under field conditions. The junior author examined honey samples of the 1938 crop which were collected in the provinces of Quebec, Ontario and British Columbia. Out of 98 samples, 77 (78.6%) were found to contain red clover pollen. This indicated that there was considerable bee activity on red clover either for the purpose of collecting pollen or nectar. It has frequently been observed that honeybees are more active on the second crop of red clover than on the first. The most plausible reason is the greater scarcity of competitive flowering plants in late August when the second crop of red clover is in bloom. The evidence of Schachinger (cf. Westgate and Coe) that the corolla tubes are shorter in the second crop may also be a factor. The high seed yields on the irrigated lands of Colorado re-

Cross-sections of red clover heads—Ottawa left, and Zofka right.

ported by Richmond (2) is apparently due to the general lack of other nectar sources for the honeybee. McLachlan (7) reports that in U. S. S. R. in areas where red clover seed is produced the seed fields are made sufficiently large to eliminate the competition from other plants for the services of the bee colonies distributed over the field.

While it may be true that seed production in red clover may be increased by the breeding and utilization of strains with short corolla tubes, close co-operation between the beekeeper and the seed grower would still be necessary to make sure that sufficient colonies were placed within easy flying distance of the seed fields. But the probabilities are that the beekeeper would have to provide extra attention to his bees to prevent curtailment of brood production due to lack of nectar not only from red clover itself but from other sources which have largely disappeared when the second crop of this plant is in bloom. In the meantime the writers are convinced that seed production in existing strains of red clover would be greatly increased if the seed growers were fully aware that cross pollination is just as necessary to obtaining a successful seed crop as good cultural practice in establishing and handling the crop. Since less and less dependence can be placed on the wild bee population to perform this task, honeybee population must be maintained and natural circumstances taken advantage of, or artificial circumstances created so that the honeybee will act as a pollinator.

One of the difficulties of red clover breeding is that the breeder can seldom take full advantage of work done elsewhere. Strains which have proven excellent at the station of origin frequently are not adapted to other countries differing in climatic conditions. The two varieties, Zofka and Kellner, were established in a field nursery at Ottawa in 1938. The winter of 1938-39 was not severe on legumes, but these varieties were winter-killed 40% in comparison with 5% winter-killing in Ottawa and Dollard. It is clear that further selection for winter hardiness would be necessary before these varieties could be grown successfully under Canadian conditions. Then again, varieties to be adapted to eastern Canada should be hairy on the stems and leaves, since this character gives a certain degree of protection against leaf hopper attack. While Zofka and Kellner do show some variability as regards hairiness they are mostly composed of smooth stemmed plants.

Zofka and two standard varieties were tested for hay yield in 1939-40. Zofka yielded less than half the amount produced by the common strains. Its low yielding ability appeared to be due to a lack of leafiness. Hence, to have available a strain of red clover with short corolla tubes suitable to our existing conditions, further selection would be required. Progress in selection might be just as rapid if an adapted strain such as Ottawa was used for basic breeding material especially since considerable variability exists in this strain in regard to the character in question.

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About the Cover Picture

KING LOUIS XII

THE picture represents Louis XII, King of France from 1498-1515. It is taken from a colored miniature in the National Library in Paris (No. 5091) and depicts the King in full regalia. The royal robes and the caparison of the war-horse are literally strewn with innumerable golden bees and beehives. On the wide red border of the white surcoat, which covers the armament, on the armcut of the sleeveless coat and on the valance of the horse's covering there is imprinted in golden letters the motto: "Rex non utitur aculeo" (The King does not use his sting). This is uninterruptedly repeated all along the edging of the fabrics. Thus dressed, as history relates, King Louis XII entered the defeated Genoa on April 24th, 1507.

The phrase that the King does not use his sting refers to the non-stinging queen bee, still known, in those days as "king." The sentence suggests that Louis was "Every inch a King"—not vindictive, but benevolent and conciliatory; condoning all past defiance and guilt.

It seems that Louis XII obtained the idea from one of Thomas de Cantipre's books* which contains the statement that the ruler of bees never stings. This, he thought, ought to be an admonition to "other" monarchs to be kind. Louis XII, of the House of Valois, was called "The Father of the People." His evident gentility and fairness is proven by his frequently quoted saying, addressed to someone who offended him before he ascended the throne and was fearful of revenge: "Le roi de France ne venge pas les injures de Duc d'Orleans" (The King of France does not avenge the injuries done to the Duke of Orleans). During his reign he conquered Naples, Genoa and Venice.

The sentiment of Louis XII of using bees in such a conspicuous manner might have originated from Childeric, the first King of the French, or his son and successor to the throne, Clovis (481 A. D.), or the latter's son, Childebert; possibly even from Charlemagne, ruler of the Holy Roman Empire. All these monarchs had great admiration for bees and used them profusely in their emblems.

Dr. Bodog F. Beck

*Thomas de Cantipre, of Brabant, a Dominican priest, wrote a book in 1270 A. D., **Bonum Universale de Apibus,** in which there is the passage: "The ruler of the bees never stings which should be a plea that a Monarch must be kind."

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BREEDING PROBLEMS

I have felt for some time that breeders and fanciers should start to select a little closer for some of the finer points in the improvement of the honeybee and to eliminate many of the disqualifications cropping out. I grant this is a difficult task and I realize the challenge thrown out by it. I grant too that the Italian queen of today is a great improvement over the Italian queen of thirty years ago. They were then nearly all colors of the rainbow.

Let us keep that drone out of our yard who produces undesirable results or if he has a disqualification which is serious. If we did this one thing alone, it would advance the breed a great deal. It will help you directly and immediately by making a better market for your bees, and for your breeding queens. It will improve the quality of your yards in succeeding years, meaning greater profits to you, more pleasure in your work, and you will have the satisfaction of having improved the quality of bees in general.

Every breeder should introduce some system of culling and follow it rigidly year after year.

L. L. Sherman,
Chrysler, Alabama.

QUEEN INTRODUCTION

By CHARLES MRAZ

CONSIDERABLE writing has been done about queen introduction; but, in spite of that, there appears to be room for more ideas. The different methods of queen introduction may be divided into two different and opposite systems: the acquaintance system and the disruption system. The acquaintance system is introducing a queen by making her acquainted with the bees (or by making the bees acquainted with her). The most popular devices of this system are the ordinary shipping cage from which the bees release the queen after several days by eating a passageway through a wall of candy and the much better push-in cage in which the queen has a chance to lay before being released.

The safest and surest of all methods of queen introduction is releasing a queen among frames of hatching brood. Its disadvantages are many, however; mainly it needs a new hive for each queen introduced, takes considerable time, and can be done only in warm weather when brood will not chill. The shipping cage method is cheap and easy but is not always certain. It is best used when making new colonies and introducing under favorable conditions as in early spring and during a honeyflow. It is very important that the queen is released within two or three days. In many cases that means the paper must be taken off the candy end and sometimes a hole punched through the candy. This is very important when making new colonies. As they are left with only young bees, they are very slow in releasing queens, and a queen that is not released in three days is likely to be superseded by queen cells being started.

The push-in cages are better where ordinary cages will not do, as in colonies that have been queenless or when honeyflow and other conditions are not so good. It is only natural a laying queen will be accepted more quickly than one not laying. It takes more time, and the only other equipment needed is a piece of screening made into a push-in cage as advocated by George Rea, of Cornell Univeristy.

There are times, however, when all methods of acquaintance introduction will not work. We have considerable trouble giving queens to colonies in August. We have no honeyflow at this time and from 5 to 10 per cent of the colonies will turn up queenless at the end of the honeyflow. Usually something happens to the queen or she turns out to be a drone-layer. After a colony is queenless for two to four weeks in August, or has a drone-layer, no acquaintance method of introduction will work. Even the results of the push-in cages are doubtful. We naturally like to requeen these colonies if we can so they build up for winter. This brings us to the disruption system.

The most common form of this system of queen introduction is to smoke the bees until their organization is disrupted, and then to release the queen among the bees. At times, this method works well, but certainly it is not to be recommended where acquaintance method will do the job. Also, the smoke method of disruption is not certain in many cases. Bees will usually reorganize quickly and make short work of the queen.

The most successful and most certain method of queen introduction I have ever tried in obstinate cases is disruption with the carbolic screen. I first tried it four years ago, when a colony after killing three queens forced me to this system through anger and necessity. Last season, about twenty-five or thirty queens were introduced by the carbolic method, and introductions were entirely successful. In every case, introduction was made in colonies long queenless, with drone-layers, and even in queenless colonies that were being robbed out. For comparison, in one yard several queens were introduced by the cage method and several by the carbolic screen method. The queens introduced by the cage were in most cases mauled considerably by the bees and had wings torn and hair chewed off. In every case queens introduced with the carbolic method, when examined after laying, were as good as new.

This system is simple, certain, and fast. All that is necessary is a carbolic screen and, if robbing is going on, some carbolic acid. From the colony to be requeened—whether just made queenless, queenless for any length of time, or with drone-layers or laying-workers or what-have-you—remove the cover and put on a carbolic screen. The screen is left on until almost all of the bees are driven out of the hive. Then if the bees are especially mean cusses (and usually they are), the entrance is plugged loosely with green grass to keep the bees out. Give this colony one, two, or three frames of hatching brood. (Other brood will also do, and some of the bees may be left on.) Open the wire end of the cage which holds the queen to be introduced, keeping it closed with the thumb, and then place it in the hive and replace the cover quickly before the queen can get out. At this time, if the colony is being robbed, sprinkle a little carbolic acid around the entrance. This will discourage the robbing considerably.

The condition of the colony at this point is a few bees, some brood, and a loose queen running around inside of the hive. On the outside of the hive we have a discouraged, disrupted, and disorganized cluster of confirmed bachelors (and spinsters) hanging in the cold air at the entrance. If the entrance is plugged with grass, the bees will stay in this cluster for a day or two; and, in that time, even the prospects of maternity begin to look good to them. When they finally work their way through the entrance, a few bees at a time, what do they find but a queen and some bees already starting housekeeping. I guess even with bees, possession is nine tenths of the law; so what can the old spinsters do but give up their blissful solitude and come in as strangers to take up their forgotten art of nursing again! It always seems to work as simply as that.

Just how important stuffing the entrance is, I don't know. I have requeened colonies this way without stuffing the entrance and seemed to be successful. If the queen has just been killed and there is lots of brood in the hive, it would be best to leave the entrance open so young brood will not be left unprotected. This must be considered, too, where brood is given to a colony; care must be taken with young, unsealed brood that it does not get chilled. As far as I have been able to see, no harm comes to bees or brood if reasonable care is taken with carbolic screen. It should be barely dampened with concentrated acid and left on only as long as necessary.

While this method of introduction is certain in every case and in every condition of colony and weather, it is not practical to requeen colonies that are too weak to build up for winter.

(Please turn to page 240)

ROOF-TOP BEEKEEPING

By ROSELLA NEWMAN

EVERY article can not be a guaranteed contribution to knowledge. Let it suffice if it reports the activities others are pursuing in your field; or if it sustains a respect for your activity and a belief in its consequence.

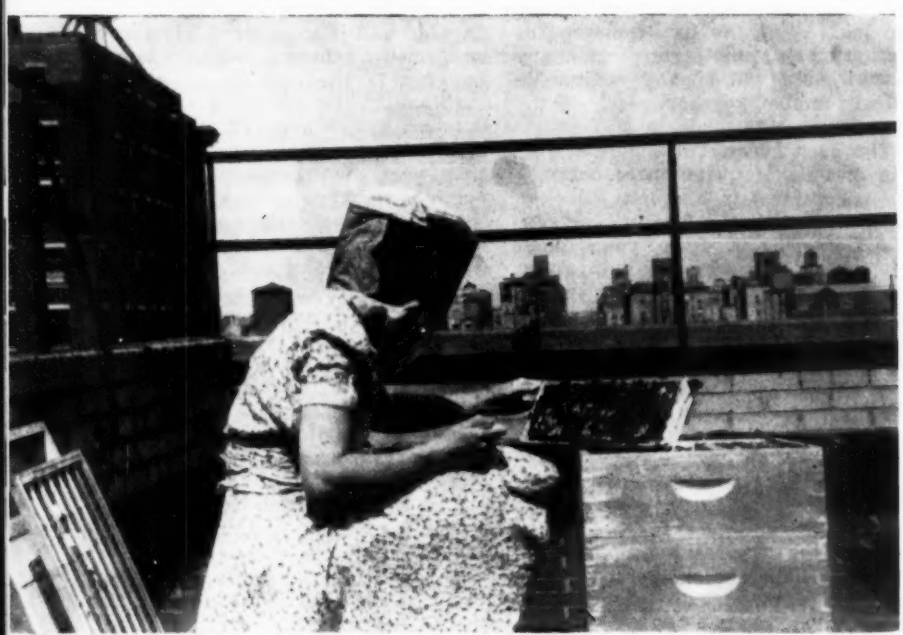
Again, every article in a trade magazine cannot and should not present a complete discussion of its point; and it is sufficient, for critical consideration, to barely report the subject matter and to high light the activities that have brought that subject matter under consideration. Those who insist on completeness of knowledge and final accuracy in every detail will never finish their work. Such a goal is not consistent with production or progress.

Contributions to the advancement of knowledge can be made by compromise and that is just as true of beekeeping as it is of any other science; and it is equally true that these contributions can be made, and from time to time are made, by the layman, who has devoted himself to the pursuit as a hobby which occupies his leisure. It was in this way that Leeuwenhoek saw that little particles of food were filled with little, living organisms, and saw that blood flowed through little tubes in the body. Leeuwenhoek, who nowadays would be called a janitor or handy man, spent his free time, when he wasn't attending to the complaints of tenants, in grinding lenses and studying under them everything about him. It remained for others to develop from these observations the fundamental advances that are based on the circulation of the blood and on the pasteurization of food.

Under the possibility that the observations of a man and his wife who came to beekeeping, as a hobby, from another science, may be of some consequence in later years, I take this opportunity to record some experiences and experiments of Mrs. Cecelia M. Grossman, of the Biology Department of Walton High School, Bronx, New York City, and her husband, known professionally and generally under the pen name of Addison Webb. Their amateur apiary is on a New York City roof-top in penthouse surroundings, where they inbreed stock and control matings so as to isolate and select dominant variations. As Mrs. Grossman is quite generally known in bee circles as Mrs. Webb, this article will continue to refer to her that way.

A bee may have a very sunny disposition south of Mason and Dixon's line, says Mrs. Webb, but put him in a package and introduce him into penthouse life and he becomes a changed character. He takes on all the evils of a city citizen. He stays up nights and goes for the bright lights. He looks for easy honey in kitchen sugar bowls that don't belong to his apartment; he buzzes around where he isn't welcome; he gets tired on his way back to the roof-top and stops off in neighboring windows on the way up and provokes complaints from neighbors and warnings from a landlord who considers a houseful of tenants, who threaten to move because of bees, more important than one penthouse tenant who threatens to move if he can't have bees. All in all such a bee becomes a first-class nuisance.

Mrs. Webb's career as a professional biologist has been devoted to a study of the structure and function of living things and the relation of these living things to their environment. Columbia University



Above—Mrs. Webb at one of the hives on the terrace of her apartment in New York. Below—You couldn't tell from the city street that there is an apiary on top of one of these buildings. The car and license plate are foreign; the sitter is Mrs. Webb.

The Webbs and, left, their friend, Count Maurice Maeterlinck, author of the immortal text on the bee.

awarded her the advanced degree of Master of Arts in this specialty and she has carried this background into the study of the bee.

The first problem was to breed a bee that was hardy. Since city penthouses are hundreds of feet above the ground, in rows of buildings that form gulleys and wind currents, a penthouse apiary must have bees that can climb mountains that slope up from the ground perpendicularly, without resting plateaus, and that are swept by winds that become stronger as they are compressed between tall buildings.

As a pure problem Mrs. Webb felt that one could be conquered. There are to be sure some traits that can never be suppressed. They are the natural and spontaneous reactions, common from birth to all animal life. A bee undoubtedly will always make for the light. But there are useful mutations that can be effected. There is a standard of colony behavior that can be developed and maintained. A first generation in a new environment may not meet that standard; and then the work of adaptation begins. That process, says Mrs. Webb, as we all know, can be hastened by attention to the law of segregation and the law of dominant characteristics. But we must be affirmative in our attitude. It is no longer a problem of how to do it, but of doing it.

But city beekeeping is complicated by more than the laws of inheritance. It is not sufficient to limit experimentations to the ratios in which characteristics will be inherited. It is not sufficient to control matings through mating boxes, or through the artificial insemination of queens. It is not sufficient to irradiate parents in a more or less scientific way in the hope that the radium-bearing needle will perchance injure or destroy an objectionable chromosome or some recessive factor and that the irradiated parent or progeny will present a change or a useful mutation that has not appeared in that species before.

The average New York City bee pursues his business in the city parks. These are sprayed. The ingestion, or perhaps even the inhalation of this spray plays havoc with an apiary. We must have a bee in city life with an increased tolerance for the arsenates.

The first step in any problem, maintains Mrs. Webb, is to give attention to the research pursued by those already in the field. Failure to investigate previous work is lamentable not only as indicating ignorance or lack of appreciation of pioneer endeavor, but is actually a handicap. And in this spirit, the insecticide plants, manufacturing the poisonous arsenate sprays, were consulted for an antidote. Apparently they were not moved by the condition their product was creating. They were, in fact, proud of it, and waved the inquiry about as a testimonial. While they recognized and admitted that the bee did good work, they condemned him for the company he was keeping, saying that he was an insect. They failed to exhibit an attitude of tolerance. Other cross-sections of human knowledge were searched for a solution. This brought Mr. Webb to the alcoholic industry, for help. In some cities, these companies compete for attention, and have what is called a "good-will drinker" who has, whether you approve or not, a salary and an expense account. It is his job to journey from bar to bar, and saloon to saloon, to invite the crowd to a drink on the house—his brand, of course. These men, according to report, start the day (or the night) with a drink of mineral oil. The theory is this drink will coat the intestinal tract, and make it a sliding pond for whatever alcoholic liquid follows. Perhaps, says Mrs. Webb, something of this sort can be worked out for bee life.

I will limit further excursion into the technical side of this article because I am told that a coming issue of the American Bee Journal is to have an article by Mrs. Webb summarizing her notations on breeding and inbreeding, or line breeding; and that her article will cover the cytology of hybrids, and what the bee germ plasm shows when it is studied under the microscope and the methods used to induce variations in this germ plasm. The fundamentals however can be summarized under three headings: the law of dominance; the law of segregation and the law of unit characters. The law of dominance holds that where two distinct characteristics are crossed, one will overshadow the other in the first generation; and the overshadowed, or lost trait, will become recessive. The law of segregation maintains that when hybrids are crossed with hybrids, their characteristics will separate out in the progeny in a ratio of 1:2:1, in which the hybrid traits will be as many in number as the dominant and recessive traits together. The law of unit characters proves that when two contrasting characteristics are crossed with two other contrasting characteristics, then these, or any of them, may be passed on independently of the other. But as these matters are being covered in detail in a later issue in an article by Mrs. Webb, no further mention is now made of them.

There are personal problems in roof-top beekeeping. These are chiefly psychological in nature. There is for example the neighbor who knows you keep bees, because one or so of them got into her apartment, and who from that time on is sure that every fly that comes into the house is a bee, and who is sure that every bee will sting her to death or do something worse to the baby.

It isn't sufficient to tell these people that when a bee is away from the hive, with nothing to protect, he won't sting you if you keep your hands off him. These people remember all kinds of stories about how a bee once stung a horse to death, et cetera, through a long list of horrors. For these people, for psychological reasons, of course, and to produce peace of mind, Mrs. Webb has a visual penthouse demonstration. Neighbors are invited in. A few sample bees are selected from the hive (drones of course). The visitor is told that the biggest bees have been taken, and they can see that they are the biggest bees, and size carries with it the conviction that the most powerful members of the tribe have been selected for the demonstration. These drones are then patted, petted, and generally, cheerfully fussed over. And, of course, no one is hurt. The visitor is heartened, and perhaps relieved of a percentage of her fears; but she is cautioned against similarly playing with bees in her own apartment, and encouraged merely to "forget them." Of course all neighbors and visitors who attend a demonstration leave with a bottle of honey. It has a healing effect.

A series of form letters have been prepared for complaints of a standard nature. If a neighbor complains that his nighttime reading is disturbed by bees banging against his electric globes, he is pleasantly advised that the offenders are not out of the Webb apiary, because Mrs. Webb counts all of her bees as soon as evening time comes along and locks them into the hive for the night; and that as far as that night is concerned, all the Webb bees were present and accounted for at retiring time that evening. Hence it must have been some wild, outside bee. Of course the letter of explanation is accompanied by a complimentary jar of honey.

Your social problems, according to Mrs. Webb, can be minimized considerably, if you "say it nice."

I presume that roof-top beekeeping will never become a significant factor from the point of view of honey produced. It will, however, always be a point of interest in its direct neighborhood, and what this industry can use, in common with all industry, is interest in its product, developed in an interesting way.

Meanwhile Mrs. Webb's experiments continue, with the neighboring criticism minimized, and she is concentrating among other things on a "stingless" bee, like the Trigona and Melipona of the Americas and Australia, but with the virility of a mountain climber and the industry of a Caucasian.

As I said at the opening of this article, contributions can be made to any science or art by the hobbyist. I have already given the example of Leeuwenhoek. There are many others. There is Eli Metchnikoff who developed the theory of phago cytoses: that white cells eat the bacteria; and Koch, whose wife wanted him to stay home nights, so she bought him a microscope. He isolated and identified the tuberculosis germ and developed a number of principles of bacteriology.

Then there is the side of the question which deals with scientific untruths that have been accepted and followed for years, without thought. These untruths have crept into the writings of "authorities" and as the written word we have accepted them as an established fact. If we can believe historians, an older civilization believed that men had more teeth than women and had one rib more than women, because Aristotle said so and because Aristotle put it into writings; and his writings, in turn, were preached and copied by his disciples. A hobbyist, from another field, is more apt to challenge the accepted, orthodox beliefs than one born into the fold. And so, perhaps, something unlooked for can be expected from roof-top beekeeping.

Far Rockaway, N. Y.

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NORTH CAROLINA BEE TRAFFIC CONDITIONS

The North Carolina Department of Agriculture through their State Apiary Inspector, Mr. P. G. Craddock has issued regulations relative to change in bee disease control regulations affecting the movement of bees into North Carolina.

All bees except live bees and queens in wire cages without comb or honey will be admitted only when each package has attached a valid certificate of apiary inspection issued by the proper official of the state of origin.

Used hives, combs, frames, and other equipment is prohibited except when each shipment is accompanied by a permit issued by the State entomologist of North Carolina.

Additional regulations specify that no permit will be issued until valid certificates of apiary inspection from the State Entomologist of point of origin has been properly filed and statement to the effect that the bees were inspected within 60 days of the proposed date of entry into North Carolina. Also that the bees have been found free of contagious and infectious disease and the number of colonies inspected, etc., together with date of inspection, ownership and location must be included.

Additional statement must be made that State Entomologist or State Inspector has inspected said bees and equipment and any other bees belonging to the same owner and that they have been found free of infectious disease.

Provision is also made for the issuing of proper inspection permit for entry even where states do not have inspection service where the North Carolina State Entomologist feels he has sufficient evidence to assure him that the bees are not infected with disease.

Application is to be made directly to the State Entomologist, Department of Agriculture, Raleigh, North Carolina or to P. G. Craddock, State Inspector, of the same address, and copies of the regulations should be secured before making such application.

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AN UNUSUAL SOUND

One of the most unusual sounds in nature is the piping of the queen bee. To compare it with another sound, to explain to others, who have never heard what it is like, is difficult. It is somewhat like a loon call at a distance. The breaks in its volume make the cry sound almost like **waa-waa-waa-waa,** without a second's pause between each utterance.

I heard it first from a queen that had been confined to a candy cage for two days. Her cry was audible ten feet away. It sounded so distressed that I investigated. She was very healthy in appearance and moved about freely. Perhaps it is only the cry of a child of nature, giving vent to an expression of her unjust treatment at the hand of man. Who knows? Carl M. Teasley.

Ooltewah, Tennessee.

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THAT WRIST WATCH

In working with bees the past summer I was cured of wearing a wrist watch in the bee yard. Whenever I worked I usually forgot to take off the watch and the bees would sting my wrist near the strap so badly I would have to keep the watch in my pocket. My advice is—take your wrist watch off. If you disagree, experiment for yourself.

Paul E. Farrell,
Bakersfield, California.

INCREASING LOCAL SALES OF HONEY

By HAROLD J. CLAY

[Talk given by Mr. Clay, Associate Marketing Specialist, U. S. Department of Agriculture, at Annual Convention of American Honey Producers' League and American Honey Institute, Omaha, Nebraska, October 23, 1940.]

IN marketing his honey, the beekeeper is handicapped by the fact that beekeeping is still essentially "small business." Fundamentally it would be a fine thing for the honey industry, I think, if "big business," with ample funds, either in the form of regional cooperatives or larger packers, would get back of the sale of honey and see that food stores generally, including independent and chain grocery stores and markets, delicatessen and health stores, were kept supplied with honey of uniform color and flavor just as they are with other food products that are known as "staples."

I make this statement because I know that one of the reasons for the failure of honey to sell more readily is the wide variation in the color and flavor of honey that is found from season to season in some parts of the country, and the even wider variation in a small producing area of such elements of packing as containers, labeling and straining. Housewives, many of whom buy direct from local beekeepers, are disturbed by such variations, particularly as they occur in packaging and straining.

Substantial reduction of "home packing" of honey may seem only a dream of the future. But to the farmer's wife of 50 years ago, when four-fifths of the butter was churned on the farm, it would have seemed a dream to suggest any other procedure for that product. Yet today the proportion is about reversed, and four-fifths of the butter of the country is now produced in factories. Today when one asks at the store for a pound of butter he can expect as much uniformity in the product as he would if he asked for a can of corn.

Honey Blends Not Always Desirable

Uniformity to the same degree is not practical with honey, nor in fact desirable. There are too many honey fanciers who insist on getting straight raspberry, sage, fireweed, huajillo, clover or buckwheat honey to encourage the blending of all honey produced.

And until the Moses of honey marketing comes along, the sale of honey can be expected to continue pretty much as at present, with most commercial beekeepers selling to large buyers in 60-pound cans, and with the packing of honey by beekeepers in small containers primarily a small-time affair.

And yet, though it can be classed as a small-time industry for individual beekeepers, it is certain that many thousands of them dispose of their surplus honey locally, either to nearby stores or to individual customers. No estimates are available as to the amount of honey sold in this way, but I should be surprised if it didn't exceed 50 million pounds. If this is true it will be seen that an increase of even 10 per cent in the local sale of honey would be a substantial item. At least it is more than we have exported in any year since 1933.

Further, with present wholesale prices of honey in bulk close to record low levels, the commercial beekeeper should consider the fact that a partial shift in the sale of honey from large buyers at a distance to nearby small dealers, or to local sales made direct to the housewife, may tend to strengthen the market for remaining large lot shipments and add to his total profits for the season.

This rather lengthy prelude to my main theme is simply my way of stating that I realize beekeepers are confronted with facts and not theories, and that the problem of increasing local sales of honey is of vital concern to a large number of beekeepers.

Don't Let Honey Get Lost in the Shuffle

Let us assume, then, that Mr. Beekeeper has decided to attempt to sell to local stores a portion of the honey that otherwise he would ship to a dealer in an outside market. What are some of the things that he should consider? Among the first is the realization that few storekeepers know much about honey, and that they cannot be expected to sell what they can't talk about intelligently.

And why should they be well informed about honey? To most of them honey is only one of hundreds of items in their stock of goods. A study of 1,543 retail stores made in New York last year by Prof. Rasmussen, of Cornell University, showed that the average chain grocery store carried 874 items on its shelves—some stores up to 1000 separate items—and that even the average independent grocery store carried 448 separate items. So you see that retailers are not likely to become fully informed or enthusiastic about many of their commodities without a lot of help. Beekeepers who go to grocers with practical selling suggestions can expect much more cooperation from them, and more sales promotion work on the part of the store, than those who simply place the cans and bottles on the shelves and walk away.

Carrying a commodity in stock will not in itself sell the product. Occasional attractive displays are necessary and fundamental as a basis for really substantial sales in any store.

Displays Sell Goods

Large displays are more productive of results than small ones. "Seeing is buying" is as true as "seeing is believing." Surveys made by Prof. Rasmussen in New York City in the summer of 1939 showed that sales of apples on display in chain stores rose from 96 pounds a week when the apple display was 3 square feet or less to 636 pounds when the display covered 20 square feet or more. Similarly, sales of oranges in chain stores varied from 310 pounds a week in stores having the smallest displays to 1784 pounds a week in stores having the largest displays.

It appears from these figures that mere mass showing attracts buyers. Certainly there is more chance for Madam Buyer (and let's not forget that most food is bought by women) to see the honey if it is in a large display, even if that display can be kept up only a few days. But mass display alone isn't enough. Clever arrangement of the display helps amazingly. The "eye appeal" cannot be ignored. Why, for example, do most women buy white bread and white rice when many of them know

that brown rice and whole wheat bread are better for them? To some extent, the answer is that they look more attractive on the table.

Eye-arresting labels add less than ½ cent to the cost of even 10-pound pails, and the smaller labels used on glass containers cost very little. Yet such a label may mean the difference between the purchase of honey and the purchase of corn syrup, jelly or some other spread for bread.

The Beekeeper as Schoolmaster

So here we have a sizable display of honey in attractive containers. But is this enough? What happens if Madam Buyer asks the average clerk in a grocery store a simple question about honey,—how she can know whether it is "pure bees' honey" or whether white sugar syrup has been added, for example; or says, "The last honey I got turned to sugar and spoiled, so I had to throw it away?" Would Mr. Average Clerk's reply be such as to cause the shopper to become a purchaser of honey? It is doubtful, unless he has been coached about honey in advance. Supplying the coaching is up to Mr. and Mrs. Beekeeper.

And beekeepers who have tried it out say that the average clerk, and his boss also, listen with real interest to the romance of the bee and the flower, to the story of the tireless diligence of the worker bee and the alchemy that transforms nectar into delicious honey, and to the magic tale of the countless millions of dollars added to the coffers of our farmers by the pollination unconsciously performed by the bee. Telling about granulation of honey, its purity and other properties usually follows naturally in response to questions the storekeepers ask.

Will added knowledge about bees and honey help the storekeeper and his clerks to sell honey? Well, we have no definite figures to quote about increased sales of honey, but the Department of Agriculture has on file numerous letters from store executives stating that "dealer-service" of this kind has increased the sales of fruits and vegetables in their stores 30 per cent or more, even in shops which had previously been doing a fair business in these products.

Leaving with the storekeeper a mimeographed circular telling in as helpful a way as you can the story of honey, and answering questions that customers are likely to ask, is an excellent way of keeping up the clerk's interest and laying the foundation for a steady future business.

Live bee demonstrations or displays are always good, of course, in drawing folks to a store where honey is being sold. But these shouldn't too greatly overshadow the honey display. After all, the purpose of the bees is only to build up interest in the honey.

Keep Grocers' Stocks Fresh

One merchandising help that is too often ignored by the beekeeper is that of keeping his stock fresh on the grocers' shelves. This involves the careful exercise of judgment in deciding what an individual grocers' sales capacity is likely to be before he is called on again, and the replacing of honey containers that look shopworn or in which the honey has started to granulate.—unless the storekeeper is the rare individual who has customers that prefer granulated honey. In this case honey that is fully granulated should be provided, and preferably honey that has been finely granulated by the Dyce process.

And speaking of Dyce-processed honey, can any one tell me why it isn't more popular in this country? You know that literally millions of pounds of honey are processed by this method just over the line in Canada and sold at higher prices than is received for other honey. And the housewife should be delighted to know of a kind of honey which will not drip all over little Johnny's suit when he eats his bread and butter spread with honey. Perhaps it will sell more readily when the nature of finely-granulated honey is better understood by the average housewife.

Many beekeepers like to sell honey from house to house. They enjoy the contacts that are made and the chance to tell more about bees and honey or about some new recipe put out by the American Honey Institute. It's profitable, too, especially if the salesman takes with him several different types of honey or honey from different nectar sources. Most housewives like to "shop," and even the opportunity of selecting a bottle or pail of honey from several different kinds may mean a larger sale, because the buyer often can't resist trying out something new in addition to buying a brand of honey with which she is familiar.

Don't Ignore Junior Salesmen

But how many beekeepers send out their boys and girls to take orders for honey? Usually these young folks can answer about as well as their parents the stock questions asked. And often the freshness in the method of approach of these youngsters makes an appeal to the housewife who might greet the beekeeper himself with the statement that she is too busy to talk. Someone else's boy or girl could be coached to answer the usual questions, and to take orders on a commission basis, if the beekeeper's family can't provide the youthful salesmen. A group of high school boys and girls has been found to be an excellent selling crew, by more than one beekeeper.

One of the easiest methods of disposing of a substantial volume of honey, as some of you know in this Plains Area, is through truck routes. Perhaps a truck that travels very many miles places it a little outside the province of my subject, but a beekeeper who can start out with a truck loaded with 60-lb. cans of honey perhaps not even labeled because his customers know him and his honey from long acquaintance, and who can deliver the honey to farmhouses along his route that will take a "60" every few months, has a prize possession. Yet plenty of beekeepers have developed such prizes, by work and by the best advertising in the world—one farmer telling his neighbors where the honey came from.

In computing selling prices of honey sold to grocers or direct to the consumer, the beekeeper should realize that such sales must be at higher prices than sales to large buyers. Middlemen deserve a profit, and if a beekeeper assumes their functions he should add their profits to his price. The price cutting beekeeper who enters a community only to undercut the price of commercial packers or of beekeepers who pack honey, is a menace to the industry.

Quality Is Selling Point No. 1

In all this talk I have tried to make it plain that success in selling honey locally involves above everything else the maintenance of high quality. Careful straining of extracted honey, for instance, is always important, but especially so with honey sold locally. Bringing in honey from other parts of the country to blend with your own, if necessary to maintain the flavor to which customers have become accustomed, is profitable in the long run even if the honey brought in costs more than the blended honey sells for. That "the customer is always right" is especially true with local sales.

Some one has said that the most practical housewife can't spend a dollar twice. Whether her honey dollar is spent for your honey, or that of your neighbor or of a commercial packer, will be largely determined by your energy, efficiency and enterprise, and most of all your enthusiasm. And whether your honey is sold locally or to distant buyers, my best wishes for the success of each one of you!

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SACKING FOR FUEL

Readers mention different kinds of material for smoker fuel. I use old burlap sacks, cut into strips and rolled up. Once on fire, the sacking will not go out, even if it is not used for a considerable period.

Bro. Alphonse Veith, O. S. B.
St. Meinrad, Indiana.

MILLIONS FOR SUGAR BUT NOT ONE CENT FOR FEEDERS

By HY. W. SANDERS

THE title is exaggerated of course, so as to get the parody on a famous quotation. But the story follows it to this extent, that it tells how we fed 3300 pounds of sugar to 500 packages of bees, hived on foundation, with practically no waste and a negligible expense for feeders.

A year ago last spring we had an outbreak of disease among our bees. In one locality where we have had outyards for several seasons we had reason to suspect the existence of a center of infection. We examined the colonies carefully and caught several cases at the start and we hoped that we had the disease under control. However by the time this was done a lot of combs had been brought back with honey and extracted and these were mixed with the others in stock. Result was that last spring we had a number of infected colonies scattered all through our outfit, and we decided that we must sterilize everything.

The process of cleaning up must be told in another story. In brief it consisted of steaming the covers, bottoms and supers with steam at 30 pounds pressure for 20 minutes, reclaiming the wax, making it up into foundation and starting all colonies again from scratch. It meant a lot of work in the fall and winter but we got through it, and prepared for 500 three-pound packages to be installed here about May 1. We usually have bought two-pound packages but we thought that the extra pound would be helpful as the colonies would have a lot of comb-building to do.

The books especially the older ones are full of feeders of all sorts and sizes. Patents have been granted on hundreds of bee feeders. The long period of small hives run for comb honey and designed to "force" the bees into sections, and the influence of the absurdly small "standard" hive used in England: these factors have occasioned the invention of feeders without number. Most of them are complicated and expensive and quite out of the question when the problem is to feed 500 colonies at the same time with as little labor and expense as possible. We then consider using cans or pails with nail holes in the lids, inverted over the combs. Our experience with these is that there is a lot of waste, owing to the difference in the size of the holes made with the usual shingle nail. Besides you do not get 500 cans or pails for nothing, and nail holes in the lids would spoil them for use afterwards, even if they could be salvaged without other damage. Also we would have had to empty 500 supers, put them around and take them back after two weeks—that makes a lot of work.

The problem was solved by using ordinary quart sealers. The glass stopper was removed and a four-inch square of "Indian Head Linen," a dress material, substituted. The metal ring was screwed down to make the sealer tight. We had found by test that Indian Head is just woven tightly enough to prevent sugar syrup from running through, yet not so close a weave as to prevent the bees from extracting the feed. We have for some years used this material under the lids of feeder cans in packages during the truck trip north.

The hives were prepared by placing in each one six frames of foundation, leaving the remainder of the space vacant. Some lath was cut up into pieces two inches long and two such pieces were placed under each inverted sealer on the floor of the hive in this unoccupied portion. The packages were fed heavily by syrup poured through the cage over a tub in the honey house. About half an hour later, when the bees had taken up most of the feed, they were shaken into the hive, and the queen cage placed down among the bees with a hole made through the candy for the queen to emerge, and the cage placed with this hole pointing upwards. The queen cage is leaned up against the nearest comb.

Thus the hive contained six frames of foundation, three pounds of well-fed bees in a heap on the floor, a queen ready to emerge in a couple of hours, and a sealer of sugar syrup (half and half, sugar and water) inverted over the two little blocks and with its mouth covered with Indian Head linen. The weather happened to be cool and cloudy. If it had been bright the entrance would have been stuffed with grass to prevent desertion.

In this way the entire 500 were hived. There were several cases of desertion and a little drifting on a bright day a couple of days later, but practically it was a success. The bees had two combs drawn out by the end of the first week and took the syrup from the sealers and stored it in the combs above the new brood. The hives were examined every three days and empty sealers replaced with full ones, and the average consumption until new nectar began to come from dandelion and fruit bloom was 6½ pounds—perhaps 13 pounds of syrup. The bees had some help by a light flow from willows.

Perhaps someone may ask how we got the sealers without cost. That's easy: we bought them all right. But we shall wash them, fill them with honey at extracting time, and sell for enough extra to get the sealer money back. Not one cent for feeders.

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THE LITTLEFIELD SYSTEM

I would like to ask a few questions in regard to Roy Littlefield's system of beekeeping as described by Glenn O. Jones, on page 494, in the October issue.

He says he produces a limited amount of chunk comb honey. Would his system work all right where you wanted to produce, say, two thirds chunk honey or more?

Does he produce chunk comb honey in the same super with extracting combs? Would his hive be all right to use half depth supers on? Would the six-inch Dadant super be okay?

With the entrance at the top of the brood combs, will the bees clean up the bottom of the hive, or will it be necessary to remove the brood frames and clean the bottom? If so, how often should this be necessary?

How much space does he allow under the brood frames, between the bottom of the hive and the bottom of the brood frames? How does his hive compare with regular bottom entrance on honey production per hive? What are the measurements of his entrances and does he use any other openings for ventilation during supering? How many supers per hive does he use to take the crop?

Just how is his super shell holding the excluder formed so the excluder slopes upward to clear the entrance? Could the new welded excluder be used?

Since his hive uses the deep frames and has a large brood chamber like the Dadant hive and the Dadants do not consider queen excluders necessary, do you think a queen excluder would be necessary with the Littlefield hive?

Can you produce any section comb honey with the Littlefield hive?

I can see many improvements in the Littlefield hive over the standard hive, such as (1) no draft on the brood combs—therefore, stronger swarms and more honey; (2) entrances well above the grass without the use of high hive stands which would put the supers above one's head at times; (3) less work per hive, and packed to keep out the cold of winter and the heat of summer. What could be better?

Louis F. Cox.
Lexington, Missouri.

Answers

In answering your questions, let me first call your attention to the fact that this hive and this system were adopted by Mr. Littlefield to give him the greatest possible yield of extracted honey at the lowest possible cost. Other equipment and other methods might possibly produce more surplus, but at a higher labor cost, and still others might cost less to operate and yet give a lower net return.

To begin at the bottom and treat each detail, as we go up, would probably be the easiest way to answer your questions.

The bottom board has a ⅜ inch cleat for the hive body to rest on and leaves a space of that measurement between the bottom board and the frames.

As to the food chamber, the front board is cut off on the lower edge to provide an entrance of ⅜ by 12 inches or slightly larger, and the sheet zinc excluder is nailed to the bottom and bent to fit the entrance so that the opening is between the excluder and the hive body. In the cold part of the year, this entrance is reduced with a piece of lath to about three inches and about midway on the front. It has been his experience that any colony of bees sufficiently strong in the spring to be called a normal colony will clean all the debris from the bottom without any help. A weak colony might need some assistance.

The new welded wire excluder could be used, but since it has a rim of about ⅜ of an inch, it would provide that much additional room between the two sets of frames and might cause some difficulty at times. Whether any excluder at all is necessary depends on whether or not you are willing to find an occasional frame in your surplus chambers which contains brood and pollen.

Supers of any desired size could be used with little effect on the total honey crop, but the deeper frame calls for fewer pieces to handle and provides a larger working surface for uncapping and other operations at the honey house. Chunk comb honey is produced in the more shallow frames and in a separate super.

While this system was not developed with the intention of producing any amount of comb honey, it would seem that either section or cut comb honey could be produced as well in it as anywhere, so long as the two principal necessary factors are present, that is, a hive overflowing with bees and a rapid flow of nectar.

Glenn O. Jones,
Atlantic, Iowa.

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COMB HONEY PRODUCTION IN OUTYARDS

DR. MILLER builded better than he knew. We may yet see his T super more generally used in comb honey production. Frank Rasmussen, of Greenville, Michigan, thinks so, and has formulated his plan of comb honey production upon it—with variations.

Rasmussen's supers are Miller T supers. But he uses what we here at the American Bee Journal are coming to call an "Airway Super," that is, he provided added ventilation to the super by the use of outside ventilated separators on both sides, as well as slotted, ventilated follower boards. In these particulars, it is much the same as the super described by Charles Kruse in the American Bee Journal in 1934, and by Carl Killion in July, 1940; except that Kruse and Killion ventilated not only the sides, but also allow ventilated bee space on the ends.

Such supers require special manufacture since it requires thinner super sides to accommodate the complement of sections, followers, and separators. We give no detailed description here as Mr. Carl Killion is now writing a series of articles for the American Bee Journal which gives in detail the essence of both.

Rasmussen is devoted to the grooved section; section grooved all around, in which the very accurately cut square piece of foundation is inserted as the section is folded, thus getting away from any hot plate fastening.

But Rasmussen's manipulation is most interesting. His colonies are built up in two brood chambers. When the main honeyflow is well started, he Demarees, but instead of leaving the queen below, she goes above, thus:

The queen with one comb of unsealed brood is placed in the center of the upper brood chamber. On either side is placed three frames of foundation and one of honey, the honey being on the outside. Immediately under this comes a honey board with a space about the size of the escape hole left open in the center and with a full sized zinc queen excluder placed under it. The lower chamber is equipped with six frames of brood and two of foundation, centered. The old entrance is screened and a new one seven-eighths inch deep made full way across the honey board (see illustration), so that the entrance is above the honey board, with a new alighting hinged board which reaches down to the ground. The balance of the super combs not used are distributed to extracted honey colonies.

Comb honey airway supers are added as needed. His experience is that during the honeyflow the bees make a start in the center sections first, but he has always had the outside rows finished and sealed first. We examined several supers and found this to be true. The last ones sealed were those in the second row for the outside.

But the proof of the pudding comes when the end of the honeyflow approaches. Rasmussen finds very little difficulty in having all sealed sections. He has very few carryover "baits." Apparently with the dwindling flow, the bees proceed to carry the honey from the lower hive body, up above the brood, sufficiently to fill out all unfinished sections.

The reader should not assume that supers may be put on indiscriminately, and the bees will proceed to fill out all supers of sections. A comb honey producer must necessarily use more care in supering judiciously than the extracted honey producer. Young queens are essential to the successful operation of this plan.

In swarming time the lower hive body separated from the queen and brood above, gives the deterrent of the Demaree plan, and at the same time acts as a storage safety valve should the bees become crowded.

At the end of the season the upper brood chamber with queen is returned below, honey board removed, lower entrance opened, and if storage of fall flow is insufficient, added filled combs given in the upper body.

Rasmussen gives ample packing, but avoids sealed covers. He allows "cracked" covers, the slivers being inserted on the sunny side of the colony, which have much the same result as top entrances in that they keep the top packing free of moisture accumulation.

M. G. Dadant.

SPRING MANAGEMENT

Perhaps this picture suggests the usual outcome of neglect in spring management. The bees are from a mating swarm from a nucleus box which may be seen in the background. The tree is the southern long leaf pine. The picture was taken the middle of April. It is sent by Loren Francis Miller of Wiggins, Mississippi, a snapshot of his son, Loren Sylvester Miller, now two years older than when the picture was taken.

The summary about spring management is an attempt to give practical hints from those who have contributed worth-while material on this subject.

L. L. LANGSTROTH, American Bee Journal, May, 1879

FEW will question that to succeed in this, our colonies must go into winter quarters strong in numbers, with plenty of young bees, and ample supplies of wholesome honey. In my location in southern Ohio, black bees as a general rule lose weight, after they cease to get honey from white clover—ordinarily about the middle of June—while Italians in some seasons will forage so largely on the second crop of red clover as to build new comb and add considerably to their stores. Our fall forage is seldom of much account, and the Italians frequently cease breeding by the first week in September. The black race which appears to be less prescient of the future, will often, even in poor seasons, breed much later and use up all their honey.

In similar locations Italian bees should be induced by feeding to make a good spread of brood, even if they have all the honey they need, or are so over rich that some of their combs need to be emptied. This has been usually accomplished by liquid feeding—but where this is not needed for the support of the bees, I will venture to suggest for trial a frame of flour candy where pollen is scarce, or of pure candy where pollen is in good store. My experiments last winter and this spring, seem to indicate that candy acts as an incessant stimulus to the rearing of brood, and may under some circumstances be used much more advantageously than liquid food.

Colonies which have scanty stores after they have been stimulated to make the required spread of brood, should be generously fed with liquid food. I say generously for any parsimony here is on the "penny wise and pound foolish" principles. Italian bees, particularly, seem to know when they are well off, and labor accordingly—they are equally conscious of poverty, and repress their spread of brood. They can know nothing of their owner's generous intentions of anticipating their wants—and if they could, would find too often that good resolutions and timely supplies are two very different things. How many colonies have had all their hopeful energy, not to say their very lives, extracted out of them!

Having referred to the want of fall forage in my apiary, I can say, that having resided in Oxford for over 20 years, I have scarcely known anything by experience of the so-called bee disease. May not my exemption be owing to the fact that when honey was plenty, my bees had only such as was gathered before Autumn. And when it was not, they were supplied with good sugar syrup. The experience of last winter showing again that this fatal distemper has prevailed under the most varied circumstances, as to the kind of hives used and methods adopted for protecting the bees, seems strongly to indicate that it is mainly caused by late gathered honey. Those who have suffered, so heavily, may next fall, extract such honey and supply its place with sugar syrup, or honey extracted earlier in the season—leaving a few colonies to winter on their late gathering, so as better to test the matter . . . .

Where liquid food is given, it may be made thin enough to supply what water the bees need, or this water may be put in a comb easily accessible.

In extracting, I always supply from a pail of water, one of the outside combs, and saved for honey gathering, the labor of thousands of bees. My neighbor, Mr. D. A. McCord, has an ingenious device which may be called a lamp-wick water-feeder. The bees suck the water from a bottle, through a wick which passes through a cork. This water feeder may be kept under the chaff cushion where it will always be warm and accessible even in very cold weather. The bees can thus liquefy the candy on which they are incessantly working, and are not lost by water excursions in unsuitable weather. Timing some water gatherers this spring I found them to be about twice as long in loading up, in chilly weather, as when weather and water are both warm.

In a country as extensive as ours, the conditions of successful bee-keeping are so various, that it is often quite impossible to lay down rules which shall be applicable to widely different latitudes. Prof. Cook, in his apiary at Lansing, Michigan, finds that flour feeding is of small importance—the natural pollen being usually abundant as soon as bees are able to work in the open air. In Southern Ohio, however, flour feeding is often almost a necessity. In some seasons the bees use it largely before the pollen buds open. This season severe cold destroyed them just as the bees began to use them, and but for the flour, breeding would have been suspended in most of our hives for nearly a month—most of our colonies having consumed all they had on hand. A week ago I examined the combs of more than 20 starved colonies in this vicinity, and found in them all, less pollen than I have often seen in two combs in Massachusetts. In regions of abundant autumn forage, pollen is often gathered in excess of the wants of the bees. Some old English authors complain of what they call these injurious "sloppings" in the combs of old colonies. Ten years ago, late frost in this region, so completely destroyed the pollen supplies, that I had to resume flour feeding late in May! Some colonies had already begun to devour the uncapped brood.

If our colonies in this region were not strong in honey gatherers by the last of May, the more colonies we have, the more money we are liable to lose. On the contrary, a slow increase of bees in the spring may be desirable in regions where there is little early forage, and where usually the late summer and fall gathering constitutes the main crop. In such regions the "quart of bees," theory, provided you can safely winter that number of young bees, may not be so far out of the way, as many have thought—while colonies stimulated to early strength may use it only to eat up all their stores, and die unless they are fed largely. I give the experience of a friend on this point. In the month of May he moved his large apiary from Northern Ohio to Iowa. His colonies were in just the condition in which he found them most profitable in his old home. In his new location, he found no white clover, nor indeed anything on which his bees could subsist. They consumed all their stores—many died and all would have perished but for extensive feeding. When the basswood and fall supplies came on, the survivors gave him a large surplus. As matters were then, how not to have his bees breed early, was to him the most important problem and he kept them buried in their winter clamps as long as possible. When I visited him, he showed me a line of white clover more than half a mile long which sprung up from seed sown by him in one of his walks.

Having seen apiaries from Maine to Mexico, I increasingly realize that in our instructions to beginners, the best that we can do is to lay down what may be called the general laws of profitable bee culture, while the application of these principles may constantly remind us that "what is one man's meat may be another man's poison." Only those with sufficient knowledge and sound practical judgment, will ever be able to apply these principles to their own localities, in the varying circumstances which, in the long run, must be encountered by every beekeeper. Such men as Quinby, Grim, Hetherington and Harbison are admirable examples of what can be done in this line.

♦

G. M. DOOLITTLE, American Bee Journal, May, 1898

AS I now feel in the matter there is only one thing which is really essential to look after as soon as the bees are put from the celler, or in

early spring, no matter which way the bees have been wintered; and that is to see that they have plenty of honey to last them till pollen becomes plenty, or steady warm weather arrives.

This part is something that can be done on any cool morning after a day or two of cool or cold weather, when the bees will be clustered compactly together, thus drawing off from much of the comb surface, so that you can peer down the vacant spaces between the combs, outside the cluster of bees. To do this, carefully remove the cover to the hive, then as carefully roll back the quilt or cloth covering over the combs, beginning at the end or side the farthest from the entrance, as the cluster is generally formed near the entrance, rather than next the back side of the hive. If you have been careful you can roll the covering back to the cluster of bees with arousing them but little if any.

Now look down between the combs, noting the sealed honey they have, and if plenty is seen along the top bars of the frames that colony is safe during the next month to come. If little or none is seen the hive should be marked in some way, and the very first day (when the bees can fly) should be embraced to feed all such colonies. To do this understandingly the frames should be taken out and examined to see how much honey they really do have, and enough be fed so that each colony has at least 10 pounds.

Sometimes we find colonies which do not show any honey along the top bars of the frames on account of the bees carrying the honey from this portion of the hive down into the cluster during the winter, although very few colonies do like this, in which case they may have honey lower down in the combs. Where this is the case an examination of the combs by lifting from the hive will reveal the same. When looking at the bees during the cool morning it is well to note how many spaces between the combs the bees occupy, and set it down on a piece of section, which is to be left on the hive, so that we may know something of what will be needed for this colony when we commence active operations later on. I write on the section piece thus:

Supposing it to be April 5, or the fourth month and fifth day of the year 1898—'98, 4-5, H. P.; S. 6—which tells me at any time I may look at this piece of section thereafter, that on April 5, 1898, that hive contained plenty of honey and a cluster of bees large enough to occupy six spaces between the combs; or in other words, it says that the colony was A No. 1 for that time of the year, and needed no further attention until the time for general work among the bees.

The markings on the different pieces of sections are varied to suit what is found in each hive, and are left on the hives till both sides of the section are completely covered over with this "brief" regarding the colony it contains. From this piece of section I can tell regarding the "standing" of many colonies of bees as far back as four years, and it is a great help in deciding which queens are best for further breeding purposes.

In deciding as to the amount of honey each colony should have it is well to remember that bees consume much more honey at this time than they do during fall and winter, and that it is better to err on the side of too much honey than on the other, which will mean a retrenchment of brood-rearing a little later on.

Having made sure that all have honey enough there is no further need of molesting the bees till the weather becomes generally warm enough for them to work in the fields or trees nearly every day gathering pollen and honey. In fact, I now believe that further disturbance is positively detrimental, inasmuch as it often causes the loss of bees and brood by breaking the cracks open about the top of the hive so as to let the warmth out, as well as a greater consumption of honey, without any proportionate gain to the colony.

Six weeks is a sufficient time to build up a fair colony to one sufficiently strong to store honey to the best advantage, and as the clover usually begins to yield honey here about June 20, from May 1st to the 10th is soon enough to begin working for brood, and it is better not to touch them even now, unless the weather is warm enough so that the mercury reaches from 60° to 75° during the middle of the day. With a temperature of less than 60° above zero, brood is liable to be more or less injured in handling, from which a positive loss is made rather than the intended gain. If the weather is fine about this time, the internal condition of each colony is inspected by taking the frames out of the hives, cleaning the dead bees off the bottom boards should any remain in the bottom corners of the hives, seeing that each colony has a queen, and that there is honey enough to last at least two weeks.

A good queen is of no more importance at this time than are two or three weeks of honey, which now means from six to ten pounds, for if the bees do not have enough stores so they need not feel it necessary to economize, a good queen and all else will not make up the lack, for bees will not rear much brood if they are obliged to economize for fear of starvation in the immediate future.

After seeing that all have a good queen and sufficient stores they are now left till willow and hard maple bloom, when, if the weather is favorable, the combs in the brood nest are reversed by putting those frames having the least brood in them in the center of the cluster, and those having the most at the outside, thus causing the queen to fill these center combs with eggs as fully as were those which were in the center before or more so, while the brood in those now on the outside is not allowed to decrease at all. In this way a great gain is made, as I have proven by leaving rows of hives in the apiary untouched, and by treating others as here given. Understand I am speaking of the frames which have brood in them, or what is termed the "brood nest," and not the brood chamber. Only the frames having brood in them are reversed—the rest are left untouched.

In about two weeks the brood nest is reversed again, at which time all but the very weakest colonies will have brood in all, or all but one or two combs, after which there is no gain made in handling the frames, unless you have some special object in view, such as taking away the queen, changing brood from the stronger to the weaker colonies, or something of that sort. In two or three days after the last reversing is done the colonies are ready for the sections, if there is any honey coming in from the fields. If not, it is better to wait till the hives become a little more populous; yet, if we wait too long the colony is apt to contract the swarming fever before they go to work in the sections, in which case our prospect for a large yield of honey is lessened.

As a rule, the fewer swarms that issue the greater the yield of honey; yet where bees get the swarming fever, as they often will in spite of all precautions, better results will then be obtained to let them have their own way, using the Heddon plan of preventing after-swarms, or some other equally good plan, then to try to keep these "fractious" bees all in the old hive.

♦

DR. C. C. MILLER, Gleanings In Bee Culture, April, 1917

IN the spring, under the stimulus of nectar and pollen brought in, the queen is not very long in getting filled with brood and eggs all the cells that the bees are capable of covering. Until this happens there is nothing for the beekeeper to do unless it be to see that the bees are kept warm and have abundance of stores. Often,

however, when this point is reached, there will be found a very great difference in the strength of colonies. Some may have only enough bees to cover a patch of brood not larger than the palm of one's hand, while others will have brood in five, six, or more combs.

There is a great deal of difference as to the rate of rapidity with which a colony having three frames of brood—let us call it three brood, for short—builds up, as compared with one having only one or two frames partly filled. In the white clover regions of the North the first will go right along increasing in strength and be in good condition for the clover harvest, while the latter will remain stationary throughout the cool days of April, perhaps losing in strength for a time, and become fit for storing a surplus only when the time for storing is over. There is a good reason for the difference. In the stronger colony the proportion of outside bees needed to keep up the heat of the cluster is very much smaller than in the smaller one. While only a fourth of the bees may be needed for an outside wall in the first case, it may need seven-eighths in the latter case.

The aim, then, should be to bring as many as possible of our colonies, as soon as possible, up to that point of strength where they will go right along increasing. This is generally called equalizing, and generally it is equalizing, taking from the strong to give to the weak, but in some cases equalizing the strength of colonies would be the very thing to defeat our purpose. Suppose we have only three colonies, two of them so weak that, if left to themselves, they cannot build up in time for the harvest, while the third is just strong enough so that it will build up in time to give a fair account of itself in surplus. Now suppose we equalize by taking from the strongest and giving to one or both of the weaker. But as the strongest was barely strong enough to be ready for the harvest, we have now weakened it so that it will store no surplus, and at the same time helped the others so little that we get no surplus from either of the three. So instead of increasing our prospects for a crop, our equalizing has decreased them.

The thing to do is to take the opposite course, and, instead of taking from the strongest, to add to it. So we will unite one of the weak colonies with the strongest. That will make it stronger, and it will develop still more rapidly, so that before long it will be able in its turn to give aid to the remaining weak colony, enough to bring up this latter to storing strength. Thus, although we have one less number of hives containing bees, we have doubled the number of colonies yielding surplus.

So when we have a lot of weaklings on hand in spring, the right plan is to begin strengthening those that are already the strongest.

But this condition of affairs is not very likely to be found in the apiary of an experienced beekeeper. Most of his colonies are strong enough in spring so that they will easily grow into good storing strength, while with proper management those that, left to themselves, would not be able to do anything on the harvest, can be brought up so that every colony in the apiary will be a storer.

The way to do this is to draw from the strong and give to the weak. That looks easy—is easy—but it is also easy for the beginner to proceed in the wrong way, and thus fail of full success. His first thought is likely to be that the weakest of the weak ones is the one that first needs help, and so he works on that basis, constantly giving help to those that need it most, leaving the stronger of the weak ones to be helped last. The rule should be exactly the opposite: **Always help first those that need the least help, leaving the very weakest to be helped last.** Along with this rule should go another: In drawing from the strong to help the weak, never reduce a strong colony to less than four brood. With these two rules constantly kept in mind there can be hardly any danger of making mistakes.

Let us now have a distinct understanding as to what is meant by "four brood," "a five-brood colony," etc. Nothing is entitled to be called a brood unless at least half the comb on each side is filled with brood, or brood and eggs. If a colony has brood in four of its frames, and one or both of the outside combs are less than half filled, no matter how full the two central combs are, that's not "four brood," but "brood in four." So it may happen that a colony with two brood may be stronger than another colony with "brood in four." For there may be more brood in the two combs of the one colony than in the four combs of the other.

With this definition and our two rules in mind, let us on a good flying day in spring proceed to look through the apiary; and suppose the strongest colony in the apiary has "brood in five." Nothing doing. For if we take one of its best brood from this strongest colony, it will be left with "brood in four," and our rule says we must not make it less than "four brood." But if, on this or a future day, we find a colony with five brood, we will take from it one brood with all adhering bees, making sure that we do not take the queen. The combs we take will be one of those containing the most sealed brood.

Where shall we put the brood and bees we have taken? In the apiary we may have all the way from "brood in one" up, and any colony having less than four brood needs help. So the first colony that we come to having "brood in four" will receive our frame of brood and bees. We need not, however be so very particular, but give it to a three-brood colony if we happen to find one of that kind before reaching a brood-in-four colony.

Putting into a weak colony a frame of brood with strange bees will not endanger the queen so long as her own bees are so greatly in the majority; but it is well to take pains to put the strange bees at one side of the brood nest, of course next to the brood.

In taking brood from a strong colony it may happen that we cannot find the queen. In that case we carefully brush off all the bees, but are particular to give this beeless brood only where we are sure there will be enough bees so that no brood shall be chilled.

In making our rounds we arrange the combs in each hive so that the first comb at the furthest side from us shall contain no brood—generally it will have pollen—but next to it shall commence the brood. Then the next time around it will not be necessary for us to go any further than the first brood on the nearest side in order to know just how many brood are in the hive. We will also make a record of the number of brood in each hive.

In our rounds we may come to a colony that has more than five brood. In that case we take all the brood it can spare, only so we leave four brood in the hive.

In this way we make the rounds of the apiary, drawing brood and bees from each colony that has five brood or more, and giving to each colony that has more than five brood. A colony with four brood will be left as it is.

It is possible that there are so many strong colonies in the apiary that in this first round we shall be able to bring up to independent strength all the colonies in the apiary. In that case a brood-in-three colony will need two brood, and a two-brood colony will also need two brood. There will now be so large a proportion of strange bees that the queen will be endangered. Two ways out of the difficulty before us. We may give a single brood today, and two days later another. Or we can give queenless bees which will treat kindly a strange queen. For this purpose we will draw brood and bees from the strong colonies, and put them in an empty hive on a new stand. All the better if there are enough to pile them two or more stories high. All the field-bees will return to their old homes, but abundance of young bees will be left. Two days later we can take

(Please turn to page 237)

DEPARTMENTS

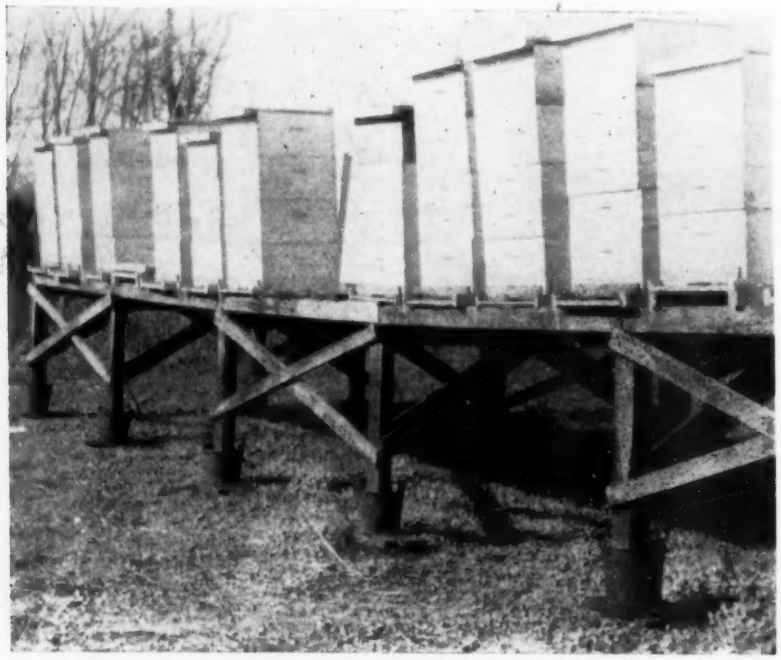
THIS AND THAT • • FROM HERE AND THERE

APIARIES IN THE AIR

A serious pest to the beekeeper in many localities in California and Louisiana is the Argentine ant. It is a very small species, which the bees seem unable to resist. The ants are too small to be attacked and destroyed by stinging, and they invade the hive in such numbers that they kill the colony.

The beekeeper must provide some defense to prevent the ants from reaching the hive. The most common barrier is the hive stands with legs in a liquid which the ants are unable to cross. Oil is the thing most commonly used. If water is used the containers must be refilled frequently because of loss of moisture through evaporation.

The pictures show how apiaries are arranged in many locations along the Gulf Coast. The elevation of the hives guards against ants and also protects the hives from floods.



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EDUCATE THE GROCER

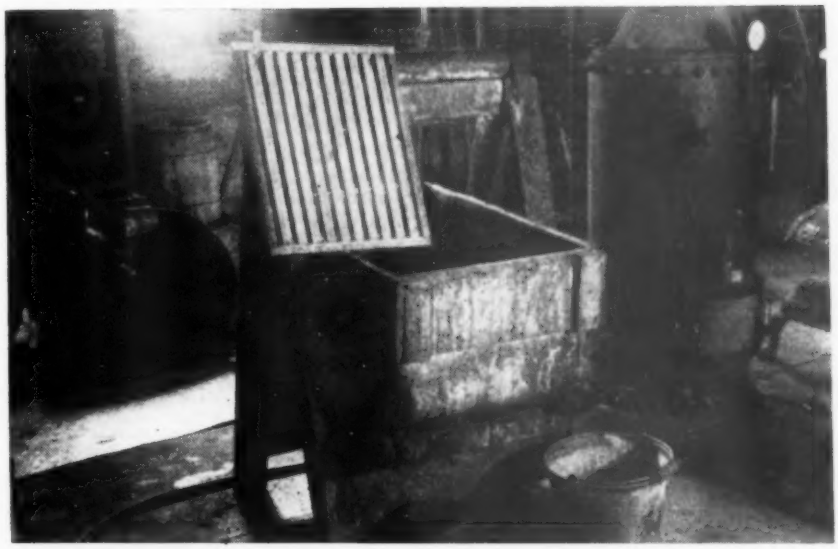
If we go into a grocery store and say to the manager, "Which sells the best, honey or syrup?" he will probably say "Syrup." Then if we ask him, "Which is cheaper?" he will again say "Syrup." Many beekeepers would agree with the manager of the grocery store, but actually honey is much cheaper than syrup.

If honey is to be made as thin as syrup we must add 1¼ cups of water to each cup of honey. These figures were supplied by the U. S. Bureau of Chemistry, so we must accept them as correct. Therefore, to arrive at the value of honey and syrup we must compare the price of a 5-pound tin of syrup with 12½ pounds of diluted honey. Or else compare the price of a 5-pound tin of honey with only 2 pounds of syrup if the water has been taken out to make it as thick as honey. Water can usually be had free, so why pay for it in a tin of syrup?

At this time, of course, we are not considering the superior value of honey as an article of food.

J. P. Hodgson,
New Westminster, B. C.

ESSENTIAL ACCESSORIES



We have just finished cleaning and washing some five hundred queen excluders in this tank. It did a fine job, and it is such a simple easy method I wonder why beekeepers do not clean up the wax and propolis on their excluders and other equipment which can be handled in that way. It surely is worth-while. The equipment comes out like new and eliminates danger of disease. I put about thirty gallons of water in the tanks and two cans of lye, and a steam coil keeps it boiling continuously. Put your equipment in and boil it for a few minutes. You will be surprised how clean the material is when it comes out. Two men can wash several hundred queen excluders in a day's time. Brood frames may be cleaned up the same way. By using a special fork a full super of frames can be picked out of supers at a time, washed clean, and returned to the super without removing, the frames from the fork. Of course, the combs are removed from the frames before this work is done. The washed equipment does not offend the bees. Neither does washing rust the wires.

Leroy Baxter,
Blair, Nebraska.

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NEW WISCONSIN ADVISORY COMMITTEE

Ralph E. Ammon, director of the Wisconsin department of agriculture, has announced an advisory committee of five members to aid the state department's new bee and honey section, including Robert Knutson, Ladysmith, president of the Rusk-Sawyer Association; Leonard Otto, Forest Junction, secretary-treasurer of the Fox River Valley Association; Conrad Kruse, Loganville; Walter Diehnelt, Menomonee Falls, president of the state association; and Dr. W. Rice, Delavan. The committee will study problems of the industry and make recommendations to James Gwin.

H. C. Brunner,
Wisconsin.

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INSIDE AND OUTSIDE THE BEE CELLAR

The two pictures (inside and outside) indicate the contrast in inside and outside wintering. The bees are snug and warm in the celler while outdoors they would have to resort to considerable muscular exertion to generate sufficient heat to equal their cellar environment. The colder it is outside, the easier it is to control the cellar. Our greatest worry is to hold the heat down so the bees are quiet as spring approaches.

Leroy Baxter,
Blair, Nebraska.

ARISTOCRAT

By MRS. LEONARD THRALL

Let us consider ways of serving ham with honey. Do not jump to the conclusion that it is expensive because ham is called for. Recently we served baked ham at noon to eight persons liberally, with enough left for evening sandwiches at slightly over $1.00. Next day, the ham hock was placed amid beans in a pot with a few spoonfuls of honey and it came in handy.

There are many ways in which ham can be prepared but none compares in flavor with ham baked with honey. You may depend on it. Compliments will shower on you and many will be the requests for the recipes you use. Here is a "natural" for beekeepers' wives to further the use of honey which blends beautifully and is more simple to use than other glazes.

There is no trick in turning out a professional job. I have talked with hundreds of women in my honey selling experiences and know that many are timid about attempting to bake with honey. To those, the use of honey with ham should be a stepping stone in gaining confidence in the use of this great health food. For once this confidence is established and the superb flavor is discovered, they begin experimenting and are soon serving complete menus.

Baked Ham

Select a nice quality ham and wipe off with a damp cloth. Wrap loosely in the inner wrapping paper, placing fat side up in an open pan. Use no water. Bake in a slow oven (325°) allowing 15 minutes per pound. Remove paper and all rind. Pour 1 cup honey over the baked ham and continue baking in a hot oven (400°) for 15 minutes.

Variations: Add 1 cup pineapple juice to the cup of honey and heat slightly before pouring over the meat.

Moist bread crumbs rubbed onto the surface before glazing gives it a company air. Or, use 1 cup of crushed pineapple in place of the plain juice.

After removing rind from ham which has either been given a preliminary boiling or is tenderized, score the fat in neat squares. Pour 2 cups honey over ham and let stand overnight. Next day add 1 cup pineapple juice and 1 cup ginger ale to the honey. Insert cloves into center of each square. Place ham in a slow oven and baste every 20 minutes for one hour or until baking period is completed—depends on size of ham.

Ham with Sweet Potatoes

You may prefer to serve sliced ham; one advantage being less cooking hours. Perhaps you will want to serve your ham with the popular combination of sweet potatoes, or, if you hail from below the Mason-Dixon line, yams.

1½ pounds ham
4 cups diced sweet potatoes
1 cup honey

Have ham cut about 1½ inches thick. Cut into pieces for serving and put in a baking pan. Cover with the sweet potatoes and pour over the honey. Bake until tender (about one hour).

Lincoln Ham

Corn bread or hot biscuits are "must haves" with Lincoln ham.

1 slice ham, about 1¾ inches thick
2 tablespoons prepared mustard
½ cup honey
Milk, sufficient to cover
2 tablespoons flour to thicken gravy

Put ham in pan, cover with water, boil for two minutes and drain water off. Place ham in baking pan and spread with the prepared mustard. Pour honey all over it and just enough milk to cover. Allow to stand 30 minutes. Bake in oven 375° F. 40 minutes. Lift ham occasionally to let milk get under it. If milk bakes away, add a little more. (Milk will curdle when baking.) When baked, remove ham to hot platter and sift flour into liquid in baking pan. Mix and add ¾ cup of milk. Place over heat and allow to simmer, stirring constantly for 3 minutes. Pour gravy through strainer over ham.

Baked Sliced Ham and Apples

2 large, thin slices raw ham (¼ to 1/3 inch thick)
1 teaspoon dry mustard
2 teaspoons vinegar
2 apples
½ cup honey
Butter

Remove bone from ham. Mix together the mustard and vinegar. Spread the mixture thinly on the ham. Slice apple very thin and spread two layers of the thin slices on the ham. Drizzle with honey. Now roll the ham the long way, starting from the fat side and rolling the fat into the center. Hold together with skewers. Place in baking pan and put dabs of butter on each roll. Bake 25 minutes in moderate oven (375° F.) Baste two or three times while baking.

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THREE RECIPES

By MRS. ERNEST RYANT

All Honey Cookies

1 cup butter
1 cup honey
2 teaspoons soda
½ teaspoon cinnamon
½ teaspoon cloves
½ teaspoon allspice
3¾ cups flour (appx.)

Boil honey and butter together for one minute. Cool. Sift flour, spices and soda together. Add flour to make a soft dough. Boil thin and bake in a moderate oven (350°) for 12 to 15 minutes. Because these cookies are thin they burn easily.

Mrs. Ernest Ryant

Economy Gingerbread

Melt four tablespoonfuls butter in a half cup boiling water. Then add 1 cup honey. Sift together in a mixing bowl two and one half cups sifted flour, 1 teaspoon soda, 1 teaspoon ginger and one-half teaspoon salt. Stir the honey and water into the dry ingredients, then beat vigorously. Pour into a greased shallow pan and bake twenty minutes in a moderate oven.

Honey Doughnuts

2 eggs
1 cup sweet milk
1 cup honey
2 tablespoons shortening
1 teaspoon cream of tartar
1 cooked potato sifted (about size of an egg)
5 cups all purpose flour
1 teaspoon soda
¼ teaspoon ginger
½ teaspoon salt

Cream the honey, shortening and potato together. Add the egg, well beaten. Sift the soda, cream of tartar, salt and ginger with the flour. Add alternately with the milk. Knead two or three minutes on a baking board. Roll out and cut with a doughnut cutter and fry in hot Spry or lard.

Grosvenordale, Connecticut.

ALL AROUND THE BEE YARD

By G. H. CALE

SPRING! Magic season, when those who are marked with the propolis stain sally forth to conquer. Today, standing by the hive, bees loaded with pollen jostle each other through the entrance. There is a hum and a fervor of work on the inside, enough eggs laid down to double the brood, already above average for the season.

♦

WINTER losses have been negligible. In fact it would be permissible to say there are no losses here. However, it has been our experience that there is as much or more loss of bees between the first of April and the last of May than the winter produces. It is our habit to take the empty hives of May 15 and double them as an estimate of those which will need to be filled for the season.

♦

I predict that in a few years the entire process of management for honey production in commercial apiaries will be revolutionized by the discoveries of those who in the light of new scientific knowledge are trying to unravel some of the mysteries which have remained hidden from the most observant eyes since bees became the hand maidens of man.

♦

THE day may come when feeding water or thin syrup and pollen substitutes will be the first of spring necessities for every colony; when the use of two or more queens to produce the bees that will harvest the crop will be standard practice, when the crop will be so phenomenal over the already highest international average that we would today scarcely dare prophesy what crops will be in the best commercial locations. Then perhaps 5 cent honey will be a golden price and many of our present day complaints will have disappeared.

♦

TOO, the day may come when every American table, at least for a part of the year, will seek the pleasure of the most delightful food with which man has been blessed. Speed the day! All shoulders to the wheel!

♦

HAVE you noticed that of late years those calamitous losses of the brood rearing season from wholesale infections of American foulbrood, have become noticeable by their absence. We have had the experience (and so have many producers) of shaking whole apiaries of diseased colonies previous to the honey crop. Losses were terrific. We estimated at one time that the cost of management due to foulbrood was fifty per cent of the total cost.

Now it is rare to find such outbreaks of disease and it is only the occasional yard where much trouble is experienced other than the usual low percentage which in good commercial management should not amount to over five or ten per cent at the worst. What is the reason for it.

It seems to me the answer is in the fact that shaking bees and allowing healthy brood to emerge in various ways, led to the survival of the unfit. In other words, we were constantly perpetuating non-resistant bees. Today, the opposite is true. Since in all states the accepted practice for the treatment of foulbrood is to burn foulbrood whenever it is found, we are no longer saving the weak and the inefficient and the non-resistant. We are destroying them. When southern breeding stock is toned up by resistant breeders perhaps American foulbrood will go back-stage in beekeeping in this country. We hope so.

♦

HOW about breeding nectar plants for more nectar? It is just as possible as breeding apples for color, size, flesh, flavor or juice. It is just as possible as breeding a bee for disease resistance, for size, color, for foraging ability, or wintering. It is just as possible as breeding a chicken for white eggs or brown eggs. Why not do it?

♦

A good problem for the plant research people. A strain of alfalfa with double the nectar capacity of the best we now have would set fine seed because bees would work it much more vigorously. It is also true of the clovers. Some of those new honey plants of Pellet's start out being pretty good plants, but bred for increased nectar production they would result in still better plants. It seems to me the time has come for our research men to tackle this job.

♦

MUCH has been done to determine the nectar content of plants and some work to determine how this nectar content varies under external conditions of weather or soil. But nobody has made an attempt to breed heavy nectar producers and from those obtain still heavier nectar producers.

Gosh!

THRIFTY BEES

Combless Packages and Queens
PURE THREE-BANDED ITALIANS ONLY

Forty-nine years' experience assures you of the best service and finest stock.

We guarantee full weight packages of young, thrifty, three-banded Italian bees and safe delivery.

Thrifty bees will build powerful colonies in time for your honeyflow. They are guaranteed to please.

Early booking insures you of the best delivery. Let us quote you our attractive prices.

W. J. FOREHAND & SONS
Fort Deposit, Alabama
Breeders Since 1892

The Most Valuable Three-Banded

Italian Bees & Queens

The best for less, satisfaction guaranteed. We'll be ready to start shipping April 15th. Let us book your orders now.

Prices Through April

2-lb. pkg. with queen	$1.70
3-lb. pkg. with queen	2.30
4-lb. pkg. with queen	2.90
Queens, each	.50

Write for May Prices.

HOMAN BROS., Shannon, Miss.

Four Comb Nuclei

(OFFER 1100)

Two strong nuclei in each new painted, ten-frame hive body, each nucleus is with four combs bees, and hatching brood, honey and 1941 laying queen, $3.15 each nucleus.

CAUCASIANS OR ITALIANS

Our hive bodies have a removable partition through the center, screen wire top and bottom. Queens are loose and laying, introduced 100 per cent on arrival. We ship rush orders. No disease. Safe arrival guaranteed.

Wm. Piefer & Sons
Gause, Texas

For Better Beekeeping
Use
DADANT'S
FOUNDATION
FIRST CHOICE of EXPERT BEEKEEPERS

AMERICAN HONEY INSTITUTE

Metaphorically speaking the American Honey Institute is a piece of beautiful tapestry. Into its fabric is woven a map of America. The first threads in this tapestry were woven in 1928. Then, rapidly, every section of the country was woven in and names of various individuals and firms appeared in glowing colors upon it. Among the names are many whose bearers have left this earth for fairer fields but whose names still glowing in the tapestry testify of work well done.

The tapestry is guarded zealously by the directors of the American Honey Institute. Some colors have faded because their owners have neglected to keep them bright. The tapestry cannot be duplicated, but it can be repaired.

Won't you help us to keep it bright with your name firmly woven within it? May we hear from those who want their name enrolled on this colorful tapestry, the American Honey Institute.

♦

The first big news is that a brand new honey recipe book, entitled "Old Favorite Honey Recipes" is ready for you. If you have not received a copy by the time this goes to press you may expect one soon. A leading educator has this to say about the book: "From the colorful cover to the complete index the book is delightful. Outstanding, even unique, among cook books are the sketches and jingles. So attractive is this book that even the peruser is led to try out the recipes. The finest mechanism of the volume is its practical index." May we ask your help in placing one of these books in every American home?

♦

There isn't space for all of the news of cooperation this month. "Saturady Evening Post" of April 5, "Life Magazine" of April 7, and the April issue of "Good Housekeeping" carried full page advertisements for Armour and Company that included honey. Besides, Armour mentioned honey three times in their "For a Happy Easter" release.

♦

The Metropolitan newspapers all carried meat advertising with honey suggested with Easter ham. It wasn't for breakfast, but it was a "honey" just the same. The March, 1941, issue of "Good Housekeeping" carried a full page colored advertisement of Crisco with a picture of a two layer Honey Cake. There's honey in the cake—honey in the icing!

♦

General Foods sent out a five-page special release April 1, on Honey for Breakfast. This is part of the release:

HONEY FOR BREAKFAST

Good Eating and Good Nourishment

The use of honey for breakfast is a golden opportunity for introducing a welcome variation in the breakfast menu. It goes without saying that honey will receive a warm welcome as a delicious adjunct to the breakfast menu. But women who know the importance of a good breakfast in healthful living will value honey as a very valuable food to boot. For the sugar of honey is a pure, natural sugar. Honey is what is know as a builder food, packed with rich food iron and other vital minerals.

Honey as a sweetener for dry or cooked cereals makes a delightful change, or a spread of honey on a bit of toast or hot muffins will add an appetite appeal to wake up the most sluggish breakfast appetite.

Because of this release, which went to so many food editors, Honey for Breakfast was featured in columns throughout America.

♦

One press service sent out this message from New York:

> "New York—Here's a golden touch for breakfast—just in case the first meal of the day has suddenly become boring in the light of spring's first sunny days. Honey—a natural sweetener is recommended by outstanding dietitians as a substitute for sugar or syrup, because it is a builder food, packed with iron and other mineral. Honey can be spread on toast or hot muffins, or used in cereal. And of course, it can be used with most pleasing results in making muffins, pancakes, or waffles."

Another writer who has cooperated with us says: "I am continuing my weekly Home Economics column, which goes to 230 daily newspapers." This writer will soon have a new cookbook, which will give a great deal of space to honey.

Do you know that honey plays an important part in the Ford Motor Company kitchens?

♦

Kellogg's release for Easter recipes includes honey in Mediterranean Ham recipe and suggests that "Bran Muffins are simple to whip up and fast to disappear, when served hot with butter and honey."

♦

The New York Times had a full page advertisement for Saturday Evening Post in its Thursday, April 3rd issue. This is an unusual and eye-catching advertisement, which focuses the attention of the reader on the activities of the bee and on honey.

♦

A second run of a bulletin, containing the broadcast on "Honey in the Spring Menu" by the director of the American Honey Institute, had to be made by WHA because of so many requests from listenenrs.

UTAH LOSES FROM POISON

Unless Utah beekeepers can secure reimbursement for losses sustained through the spreading of insect poisoning issued by the Department of Agriculture in 1938 and 1939, the state honey and fruit industries will suffer severe additional losses this year, was the warning by Otto S. Grow, president of the Rocky Mountain Honey Company of Salt Lake City, a leader in the fight to recover $100,000 in damages for Utah bees said to have been destroyed this way.

The claims were filed with national authorities January 1 by J. Fleming Wakefield, state inspector. Unless favorable action comes the annual production of honey in Utah will be cut twenty-five to fifty per cent. Most beekeepers affected do not have the funds to replace their colonies.

The loss to beekeepers will be small compared to the loss to fruit growers who have been pleading for bees for cross pollination purposes throughout the state. It is thought that the effect of poison use was directly responsible for the marked decline in the Utah honey producing during the past several years which showed a total of 4,330,819 pounds in 1936, 2,297,542 pounds in 1938, and 1,403,408 pounds in 1939.

Glen Perrins,
Ogden, Utah.

CAUCASIANS

Extra gentle, prolific, long tongue, little inclined to swarm, dependable workers—10% to 40% ahead of Italians.

CARNIOLANS

Prolific at all times, very gentle, best of winterers, build beautifully white combs, most excellent workers. My Carniolans used in the recent Iowa Exp. Station test showing Carniolans best for Northern and Western conditions. Both races bred and wintered out-of-doors here in a climate like their native lands, thus insuring their good qualities. Free paper. Prices-Untested queens, both races, 75c each. Ready May 20th on. A few 2-lb. and 3-lb. pkgs. left at April prices.

ALBERT G. HANN, Glen Gardner, N.J.

FOR SALE

ITALIAN BEES AND QUEENS

Nothing But The Best

Bright Yellow and Three-Band

QUEENS, 50c each

1-lb. Bees with Young Queen	$1.25
2-lbs. Bees with Young Queen	1.75
3-lbs. Bees with Young Queen	2.25

Discount 10 or more packages.

Send for them, they go.

GRAYDON BROS.
Route 2 GREENVILLE, ALA.

Get Running's BEES

And Get Honey—They Satisfy

The kind we use in our extensive Michigan Apiaries. All Italian Stock. Service guaranteed. Ask for our circular.

2-lb. pkg. with choice untested queen	$2.45
3-lb. pkg. with choice untested queen	3.15
Choice untested Italian queen	.75
Choice tested Italian queen	1.50

10% discount on 50 or more;
15% discount on 500 or more.

David Running Apiaries, Sumterville, Alabama — David Running, Fllion, Mich.

The BEEKEEPERS ITEM

The Southern beekeepers, own magazine, but read by studious honey producers everywhere.

With the American Bee Journal makes a combination that covers the beekeeping field.

Send $1.50 and get Both Magazines for a year.

BEEKEEPERS ITEM, San Antonio, Texas

AMERICAN RABBIT JOURNAL

. . Shows the Way to Success

Gives the latest news and views of the rabbit world—an illustrated monthly magazine of general and educational features. One year $1.00; three years, $2.00; sample 15c.

AMERICAN RABBIT JOURNAL
Dept. S. Warrenton, Missouri

QUALITY

ITALIAN BEES and QUEENS

2-lb. pkg. with queen	$2.00
3-lb. pkg. with queen	2.45
Untested Queens, each	.65

For shipment after May 15th, subtract 25c off each package or queen.

B. A. ANDERSON :: OPP, ALABAMA

The Most Honey per Colony is What Counts

The first objectives in our breeding program are to produce the best honey gatherers and heavy laying queens, that rapidly build powerful colonies.

THEY ARE BRED TO GET MORE HONEY

Prompt service, live delivery guaranteed, overweight packages, no disease, satisfaction guaranteed.

Prices—April 1, to June 1, 1941

	1-9	10-49	50 and over
2-lb. Package with Queen	$2.20	$2.05	$1.90
3-lb. Package with Queen	2.85	2.65	2.45
4-lb. package with Queen	3.50	3.25	3.00
Queen each (Postpaid)	.65	.60	.55

For queenless package subtract price of Queen

Payable in U. S. Funds

QUALITY SATISFACTION **HOLDER APIARIES, INC.** SERVICE DEPENDABILITY

In the mild climate of the deep south

65 St. Francis St.—P. O. BOX 1101 MOBILE, ALABAMA

Italians — Daughters of Resistant Stock (Bred from Government Stock) — Caucasians

All three races bred in separate yards. Over 25 years a shipper. If you are bothered with Foulbrood try some of our resistant stock. Several large beekeepers that tried some last year are requeening this year with them.

Queens After May 10th, 40c each.

2-Lb. pkg. with queen $2.25 :: 3-lb. pkg. with queen $2.95

Send us your rush order. Paying 30c a pound for beeswax in exchange for bees and queens, ship wax direct to Dadant & Sons, Hamilton, Ill., and write us about it. We do lots of trading what have you? Truckers headquarters.

Blue Bonnet Apiaries, R. 1, Box 70, Mercedes, Texas

Bright Three Banded Italian Bees and Queens

We are specializing in queens, they are yellow to tip, they keep a full hive of bees that are gentle and very little inclined to fight and are noted for their honey production. We say there are none better. Get the queen that gets results, one that you will be proud of.

Queens, each, postpaid	$ .40
2-lb. package with queen	1.75 express Collect
3-lb. package with queen	2.20 express Collect

BOND APIARIES -:- UNION, MISSISSIPPI

PETTIT'S PACKAGE BEES WITH QUEENS

An old customer writes:

"Last year we bought bees from you, about a 175 pounds. Also we bought from other bee men that were cheaper. This year I would like to buy them all from you." So he bought 350 pounds of bees.

Plenty of customers, old and new, are paying us more than the average prices, because they recognize value. You too may have Pettit Quality Bees if you order promptly.

SPRING PRICES

Quantity	Twos Each	Threes Each	Fours Each	Fives Each	Separate Queens
1-11	$2.45	$3.15	$3.85	$4.55	$ .75
12-23	2.30	2.95	3.60	4.25	.70
24-49	2.15	2.75	3.35	3.95	.65
50-up	2.00	2.55	3.10	3.65	.60

After May 20 Summer prices prevail. On through June.

Booster Bees Without Queens					Queens extra
1-11	1.40	1.95	2.50	3.05	.55
12-23	1.30	1.80	2.30	2.80	.50
24-49	1.20	1.65	2.10	2.55	.45
50-up	1.10	1.50	1.90	2.30	.40

To boost weak or package colonies, these are wonderful. They sell like hot cakes. Order early.

Cash with order. Canadians send money to Georgetown, Ontario. Our best friends are satisfied customers and we are not satisfied until you are.

MORLEY PETTIT, TIFTON, GEORGIA

MEETINGS AND EVENTS

Virginia State Meeting

The Virginia State Beekeepers Association met in Richmond on March 22 for one of the most outstanding sessions in its history. The assembly room was crowded with Virginia beekeepers, county agents, and visitors from several states. Among the visitors were Adams and Wilson, of New York; Ned Prevost, of South Carolina; E. R. Root, of Ohio; Mr. and Mrs. P. G. Graddock, of North Carolina; and Prof. and Mrs. Meacham, of North Carolina.

President Caldwell explained the need for time in laying plans for entertaining the Southern Conference in Lynchburg, October 21, 22 and 23, and engineered all items of the program through close to schedule. Prevost, discussing the coming convention, claimed it was time for the Southern Conference to take steps to protect its members from the ravages of "confidence men" as Puett has named them. Prof. Meacham gave definite promise of assistance from North Carolina in making the convention a success.

The following committee was asked to assist Federation officials in plans for the Lynchburg Honey Show: A D. Hiett, H. W. Weatherford, A. F. Boynton, H. C. Matthews and P. G. Craddock of our neighboring state of North Carolina. H. W. Weatherford and G. T. French were appointed to plan and arrange for the plant and blossom exhibit. Due to the unavoidable absence of A. H. Teske and J. L. Winebarger no change was made in their appointment, by executive committee to handle the contribution by fruit growers.

G. T. French, Virginia state entomologist, described the use of Methacrylate Resin in preserving plants in natural color. He promises to have exhibits ready for the October convention.

Our state dietician, Miss Janet Cameron, found she was in a hornet's nest when she began exploiting the virtues of crystalized honey. She promised to give honey more attention this year and reveal her discoveries to the convention group in October.

A scenic tour for the federation convention may become a possibility under the leadership of H. W. Weatherford's committee on arrangements, a possible "free transportation" trip over a scenic route from Lynchburg taking in Natural Bridge, Lexington, Grand Caverns, Portion of Sky Line Drive, University Campus and Monticello. This friendly gesture by Virginia beekeepers was supplemented by the Lewis-Dadant organization offer to furnish lunch for the group and provide entrance fee tickets to Natural Bridge, Grand Caverns, and Monticello.

W. A. Caldwell, Galts Mills, was nominated for president; I. B. Wilson, Powhatan, vice-president; and H. W. Weatherford, Vernon Hill, secretary-treasurer. The most important resolution was a protest of the cut in the federal budget for bee culture investigations.

Committee on Honey Show offered definite plans for regulation of quantity, labels and containers for Convention honey show. Same was referred to program committee of Southern Conference for adoption.

A. D. Hiett.

♦

Long Island Association, May 16

The Long Island Beekeepers' Association had as its guest speaker on April 28 Prof. Edwin J. Anderson, extension apiarist of Pennsylania State College. Prof. Anderson's topic was, "Package Bees and Spring Management," and was illustrated with moving pictures. At the meeting May 16, Dr. E. F. Phillips, head of the Department of Entomology of Cornell University will be the guest speaker. Dr. Bodog F. Beck will address the association at its June 27 meeting. His subject will be, "The Importance of Bees and Honey from Remote Ages to the Present Day."

A cordial invitation is extended all beekeepers to attend these meetings. The association would be pleased to hear from any beekeepers who are interested in its activities.

Ernest W. Graner,
Secretary-treasurer.

♦

Sarasota County Exhibits

The Sarasota County Beekeepers Association finished its first year of activities with a fine exhibit at the Sara-Da-Sota Pageant and County Fair the week of March 3. The booth was divided into three parts: first, a bee yard with beehives, queen mating hives, live bees and other equipment, and a background of trees; next a honey house containing an extracting plant, with extractor, tanks, uncapping equipment, etc.; third was the honey exhibit. This exhibit consisted of several hundred 1 pound jars of honey, arranged on shelves. Preserved blossoms of honey and pollen plants as well as beekeeping tools and equipment labeled and identified were shown. There was a display of beeswax and a foundation mill that had been in use over fifty years ago.

Many comments were received and the attendants were kept busy answering questions. This was the first honey exhibit to be shown at our county fair and plans are under way to have a larger and better exhibit next year. During its first year the Sarasota County Beekeepers Association sponsored motion pictures of bees and honey, four illustrated lectures on bees, and a series of fifteen radio programs over the local broadcasting station. During National Honey Week we had exhibits in the lobbies of both banks, as well as bees, honey and honey foods in grocery stores, and bakeries. Two local bakeries featured honey baked goods during the week.

L. P. Crater,
President.

♦

Pelican State Association

We are a group of beekeepers joined together by necessity. Our headquarters are located in New Orleans. For nearly two years we have been holding monthly meetings. This is a country of history. One of our recent meetings was held in St. Bernard Parish. To go there from New Orleans you have to pass Chalmette, the grounds where the battle of New Orleans was fought, the cemetery where soldiers from every part of the country are buried, and the monument erected on the grounds. A little farther on are the ruins of the old southern mansion where General Packenham was taken after he had been mortally wounded. Only the crumbling walls and the beautiful avenue of live oaks remain. These giant trees show by their size how long they have been growing along this avenue.

Weather conditions here have been most unfavorable. Willows that began blooming in January still have their blossoms in early March. During warm weather a tree may stay in bloom two weeks. The bees have been breeding rapidly.

Mrs. M. S. Stevenson.

♦

Cook-Du Page Association

The Cook-Du Page Beekeepers Association held their last meeting at the Marquette Park Field House Chicago, Illinois, on Saturday, April 5. The evening was well taken up by featuring a "Question Box" and finishing with coffee and cake furnished by the ladies.

A good many new faces were present and the prospects of an increasing membership is expected this year. This was the first meeting for the new officers which are as follows: president, Carl A. Olson, La Grange; secretary-treasurer, A. J. Smith,

SPRING MANAGEMENT

(Continued from page 228)

queenless bees with the brood, and, without any preliminary, use them wherever needed, no matter how weak the colonies to which they are given.

Unless we have been so exceedingly fortunate as to bring up to independent strength all colonies at the first round, we will repeat the process every ten or fifteen days until every colony has at least four frames of brood. After the first time around we shall have the advantage of knowing in advance something about the strength of each colony, and which ones are strong enough to yield brood. So it will be a good plan to go first to a few of the strongest and get an advance stock of bees and brood, say half a dozen or so, if the apiary is of considerable size, keeping them in an empty hive to be used as needed.

Of course the number of strong colonies is constantly increasing, and the number that need help at the same time decreasing, so that at the last you can give as many brood as needed to each colony. The only safe way to give bees with several brood is to have the bees queenless, as already explained. The last ones to be helped are the very weakest, even down possibly to one or more with brood in only one, a mere handful of bees, the queen being the only really valuable part. As the season is now becoming advanced, bringing such a colony up to four brood will not be enough. It should be brought up to 6 or 8 brood, and even then it will have nothing but young bees. But each day the number of bees going afield will be rapidly increasing, and at least part of the flow can be utilized, But if the plan outlined be followed up the number that cannot be brought up to have the benefit of the full harvest will be very small, if indeed there be any.

[So much in the advice in this summary demands the exchange of combs from colony to colony, that strong caution must be given not to contribute materially to the spread of American foulbrood by such exchange. Be sure each colony is healthy before proceeding. Even mark your combs so unintential dispersal of disease may later be traced and all disease destroyed. Earlier beekeepers were masters of the practices this review advises, but they had little disease with which to contend.—Editor.]

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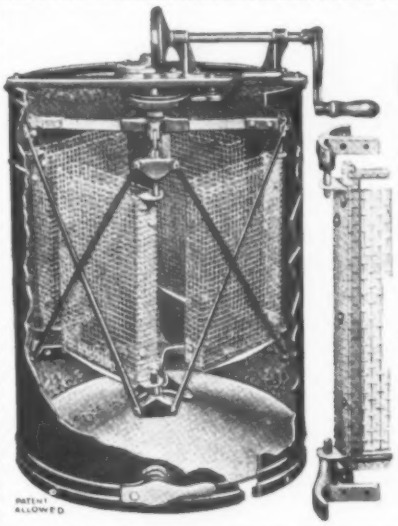
secretary-treasurer, A. J. Smith, Palos Park; vice-president, Harry Oosting, Chicago; directors — Ralph Klebes, St. Charles; A. G. Gill, Evanston; and Gun Mozee, Chicago; and hostess, Mrs. Ralph Klebes.

Our next meeting will be held on Saturday, May 10, at 3 P. M. at the apiary of Rev. John Ferlin, of the Franciscan Fathers, located on Archer Road, Route 4-A., just east of Lemont, Illinois. Father John has had some very interesting experiences with bees and has made most of his



Removable Reversible Basket Honey Extractors

Our Style 15-4 Extractor shown here has 4 Removable Reversible Baskets for Standard 9⅛" frames, that can be lifted up and out to clean or disinfect in boiling water. The gears are always in mesh, with ratchet crank, and brake, and is the easiest to turn of any 4-basket extractor on the market.

It is priced at $32.00. Equipped for either motive power or hand cranking.

This is only one of 10 different styles ranging from 2 to 50 frame sizes. Send for printed matter.

Manufactured by

A. G. WOODMAN COMPANY
GRAND RAPIDS, MICHIGAN, U. S. A.

AN OLD SHIPPER
— AT —
A NEW PLACE

The past few years have been spent in trying different locations. Looking for one where queens could be reared and bees produced under natural conditions and honeyflows, both spring and summer. Something as near ideal as could be found in this part of the South. I have it at this new location.

One thousand colonies to draw from, experienced men to do the work. Men who own and operate bees in Michigan and know what is required on the receiving end. We have been continuous advertisers and shippers since 1914. Write for prices on Italian bees and queens, you will be surprised.

	Queens	Prices are with queens. 2-lb. pkgs.	3-lb. pkgs.	4-lb. pkgs.
1 to 24	60c	$1.80	$2.40	$3.00
25 to 99	55c	1.65	2.20	2.75
100 up	50c	1.50	2.00	2.50

N. FOREHAND FLORALA, ALA.

PACKAGES

Will you get yours on time? Will your money buy quality or quantity?

Why not let us book your order now and be sure to get our quality packages of hardy, prolific Italians obtained thru years of scientific experiments. A strain suitable for northern climatic conditions.

2-lbs. Bees and Queen (combless) . . . $1.65
2-lbs. Bees and Queen (on 1 standard comb) 2.00
additional pound of bees or comb 45c
Queens 45c

Queens introduced in packages without cost upon request.

Quality :: Satisfaction :: Health Certificate.

B. J. BORDELON MOREAUVILLE, LOUISIANA

GASPARD'S QUALITY

Golden and Three-Banded Italian Queens and Package Bees at a special price for April and the balance of the season. Over 20 years' experience which assure you of prompt and efficient service. Book your order now and reserve shipping date. 10% will book your order, balance at shipping time.

PRICES AS FOLLOWS:

(Combless packages with queens)

2-lb. package with queen	$1.75	each, any number
3-lb. package with queen	2.25	each, any number
4-lb. package with queen	2.75	each, any number
5-lb. package with queen	3.25	each, any number

(Comb packages with queens)

2-lb. pkg. with queen and 1 extra frame of brood	$2.00	ea. any number
3-lb. pkg. with queen and 1 extra frame of brood	2.50	ea. any number
4-lb. pkg. with queen and 1 extra frame of brood	3.00	ea. any number
5-lb. pkg. with queen and 1 extra frame of brood	3.50	ea. any number

Additional frame of brood **50 cents** each. Queen bees **65 cents** each

***Address* J. L. GASPARD :: HESSMER, LA.**

Dixieland's Leather-Colored Italians

Our strain of bees has been improved through years of testing and selecting queens from a strain of Dark Leather-Colored Italian Queens that was originally imported from Italy. These years of testing and selecting have produced a gentle, hardy, and as good a honey producer as can be found on the market today.

2-lb. package with selected queen	$2.00
3-lb. package with selected queen	2.50
4-lb. package with selected queen	3.00
Selected untested queens, each	.60

10% discount on 20 packages or more. After May 15th, 20% discount on 20 packages or more.

Once we fill your orders you will always be satisfied with our prompt service, full weight, low supersedure, and safe arrival. You must be satisfied.

DIXIELAND APIARIES ∴ GREENVILLE, ALABAMA

THREE-BAND ITALIANS **BEES** Daughters of Resistant Stock

In addition to my past fine strain of three-band Italians, I am breeding in separate isolated yards, a strain from daughters of *Disease Resistant Stock* that I obtained from Iowa

PRICES

	1 to 10	11 to 25	26 to 50	51 to 100
2-lb. pkgs. with untested queen	$2.15	$2.05	$1.95	$1.85
3-lb. pkgs. with untested queen	2.75	2.65	2.55	2.50

Full weight packages Shipped on time—Satisfaction guaranteed

STRACENER APIARIES ❖ PRAIRIEVILLE, LA.

Are Your Packages Profitable?

Cutts' packages are making a profit for others. Why not give them a trial?

	2-Lb. Pkgs. with Queen	3-Lb. Pkgs. with Queen	Untested Queens
1- 25	**$2.10**	**$2.70**	**$ .70**
25-100	**1.95**	**2.55**	**.65**
100-up	**1.85**	**2.45**	**.60**

After May 15th deduct 20c per package or queen.

J. M. Cutts & Sons R. 1, Montgomery, Ala.

equipment in his own workshop. Every meeting that has ever been held there has been very interesting and has always been well represented by a large attendance.

Carl A. Olson,
President.

♦

Rockland-Bergen Beekeepers

The Rockland-Bergen beekeepers will meet May 18 at the Behnke farm on Spring Valley Road, Paramus, New Jersey. This meeting should be of interest to all beekeepers in the vicinity. Men prominent in apiculture will unpack a hive that George Rea packed last October. They will speak on the condition of a hive in regard to getting ready for honeyflows, swarming, and correct manipulation. We will hold our regular open forum.

Frank Schwab,
Secretary.

♦

Middlesex County Ass'n. May 24

The Middlesex County Beekeepers Association will hold its first field meeting of the year at the home yard of the Southwick Apiaries, 176 Waban Avenue, Waban, Massachusetts, at 2:30, Saturday, May 24. Benjamin R. Hildreth, of Holliston, will speak on swarm control. Hives will be opened. The Ladies Auxiliary will serve a honey baked bean supper with honey brown bread, frankforts, rolls, coffee, ice cream and honey cakes.

Arthur M. Southwick,
President.

♦

Short Course, Ames, Iowa, May 15-16

The annual short course for beekeepers will be held at Ames on May 15 and 16. The interest in this short course has increased each year, and it is believed that the program this year should prove even more attractive than those which have been offered in the past. Prof. L. E. Floyd, of Winnipeg, Canada, is to present a series of three lectures on "What Comes Out of a Package of Bees." Those who attended the session last year heard Mr. J. W. Newton, of Baton Rouge, Louisiana, present "What goes Into a Package of Bees." It is felt this discussion by Professor Floyd will be especially timely and prove to be a sequel to the program of last year.

G. H. Cale, editor of the American Bee Journal, and John G. Jessup, of the Root Co., Council Bluffs, will be on the program to give a series of discussions under field conditions. Opportunity will also be given to visit the college apiary where research work is being conducted on resistance of the honeybee to American foulbrood and other research problems pertaining to honey production.

Manitowoc Officers

Reinhard Grimm was re-elected president of the Manitowoc County Beekeepers Association, April 8, at Reedsville, Wisconsin, with William Rusch, vice-president and Fred Mack, secretary-treasurer.

H. C. Brunner,
Milwaukee, Wisconsin.

♦

Bronx County Association, May 11

The annual meeting of the Bronx County Beekeepers Association will be held at the home of William Kopeck, 2328 Turnbull Avenue, Bronx, Sunday, May 11, at 2:30 in the afternoon. A warm welcome is extended to any visiting beemen. This is always an interesting meeting and at this time new officers will be chosen for the coming year.

Harry Newman,
Secretary.

♦

Fox River Valley, Wisconsin

Cornelius Meyer, Appleton, was re-elected president of the Fox River Valley district of the Wisconsin Beekeepers' Association at Appleton, April 3: Ed. Hassinger, Jr., Greenville, vice-president; and Leonard Otto, Forest Junction, re-elected secretary-treasurer. Plans are for the summer meeting in July at Appleton.

H. C. Brunner,
Milwaukee, Wisconsin.

♦

Two Summer Meetings in Iowa

Two summer meetings are planned for beekeepers of Iowa, one at Davenport, on June 24 and 25, two days of opportunity for beekeepers to enjoy an unusually fine program composed of state and national speakers and a visit to points of interest in and around Davenport. A special feature will be a combination boat and banquet trip the night of June 24.

Also a meeting at Exira in charge of Roy Littlefield whose apiary and honey house will serve as headquarters. The details of this program are not entirely completed, but there will be plenty of opportunity to hear and see speakers who will be present with information worth while. Mr. Littlefield hopes that the honey crop will be far enough along so it will be possible to put on a demonstration of extracting and preparing honey for market.

The honey plant test gardens and

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HARDY—LONG LIVED—UNSURPASSED HONEY PRODUCERS

Shipments to May 19th—Combless		Shipments after May 20th—Combless	
2-lbs. bees and queen	$1.80	2-lbs. bees and queen	$1.50
3-lbs. bees and queen	2.30	3-lbs. bees and queen	1.95
4-lbs. bees and queen	2.80	4-lbs. bees and queen	2.40
With a standard brood comb		**With a standard brood comb**	
2-lbs. bees and queen	$2.00	2-lbs. bees and queen	$1.70
3-lbs bees and queen	2.50	3-lbs. bees and queen	2.15
4-lbs. bees and queen	3.00	4-lbs. bees and queen	2.60
Additional comb of brood	.50	Additional comb of brood	.50
With a modified Dadant brood comb		**With a modified Dadant brood comb**	
2-lbs. bees and queen	$2.25	2-lbs. bees and queen	$1.95
3-lbs. bees and queen	2.75	3-lbs. bees and queen	2.40
4-lbs bees and queen	3.25	4-lbs. bees and queen	2.85
Additional modified Dadant comb of brood	.70	Additional modified Dadant comb of brood	.70
Young laying queen	.50	Young laying queen	.40

Service—Quality—No Disease—Live Delivery Guaranteed

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IMMEDIATE SHIPMENT

We specialize in giving prompt service to beekeepers who need bees at once or on a given date. We are prepared to ship within 48 hours after receipt of your order, often same day order is received.

ITALIAN BEES AND QUEENS

Prices via Express Collect	To May 15th	After May 15th
2-lb package bees with queen	$2.00	$1.75
3-lb. package bees with queen	2.60	2.20
Untested Queens via mail	.60	.40

For larger packages, 60c for each pound of bees. Queenless packages deduct price of queen.

Discounts Allowed— 5% on orders totaling $ 20.00 or more
10% on orders totaling 50.00 or more
15% on orders totaling 100.00 or more
15% to dealers from base price

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Sturdy Italians *from* Selected Stock

Improved from fast laying stock, very gentle and good honey gatherers.

Our cells, virgins and queens are culled to insure you that good queens are at the head of your package bees. 5% discount on 20 pkgs. or more.

	Italian prices	Hybrid prices	
Honest Weight	2-lb. and queen $1.75	$1.60	Prompt Shipment
	3-lb. and queen 2.10	1.95	
	1 queen .50		

NEAL'S APIARIES, Box L 1, HAMBURG, LA.

SOUTHERN MISSISSIPPI ITALIAN BEES & QUEENS

Package bees and queens reared on natural honeyflow. Real 3-Banded Italians—Good honey gatherers. Our service for 1940 was 100%—All orders shipped on time—No delay—Satisfaction guaranteed—Fast service—Light weight cages—Overweight packages—Young baby bees.

	1-10	11-50	51-100
2 pound package with queen	$2.00	$1.90	$1.75
3 pound package with queen	2.60	2.40	2.25
		1-10	11-100
Select untested Italian queens		60 cents	50 cents

For queenless package deduct price of queen. For each additional pound of bees add 60 cents. Regularly inspected. No disease.

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Italian Strain BEES & QUEENS
Service and Quality Guaranteed.
Queens, each . . . . . $ .60
3-lb. package with queen 2.40
2-lb. package with queen 1.80
15% discount to dealers & on large orders.
Shipping point, Epes, Alabama.
LITTLE BROS. :: Sumterville, Ala.

PACKAGE BEES and QUEENS
Three-Banded Italians
We can fill your order promptly. Prices as follows:
1 to 4—2-lb. Packages . . **$2.00**
5 to 9—2-lb. Packages . . **1.90**
10 and up—2-lb. Packages . **1.70**
For 3 lb. packages, add 50c.
Queens 50c each, 50 or more 40c each.
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A Hint to the Wise
Do you want your package bees to reach you on time and containing full weight of young bees—headed with as good queen as is possible for a breeder of 19 years' experience and a love for the business to raise?
Then place your order with a shipper who thinks that you know what you need, and when you want it—a shipper who needs new customers, but values one repeat order above two new ones.
Where 24 hours is considered a long delay, 3 days a tragedy, and one week has never happened to a package order, if booked in advance.
2-lb. package with queen $1.90
3-lb. package with queen $2.40
Queens 60 cents each.
2¢ per day will be refunded on all orders after 48 hours booked. If this suits you and you like Italian bees, would appreciate hearing from you.
A. E. SHAW, Shannon, Miss.

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FAR MORE TO OFFER BUT FAR FROM BEING EXPENSIVE
Opportunities for all sports and recreations. Curative mineral waters. Air conditioned sleeping rooms... Write for information or reservations.
AMERICA'S MOST MODERN RESORT
THE ELMS HOTEL

the disease resistance testing apiary at Atlantic, Iowa, are only nine miles from Exira and likely a supplementary trip will be taken to that location.

♦

THE GOLDEN AGE OF BEEKEEPING

(Continued from page 209)

farm papers may all help to make bees and honey popular with the people.

One of the most hopeful facts is that beekeeping is still in fluid state; only to a limited extent has it become standardized. If you don't think so, just listen in at a symposium on wintering. There are so many beekeeping problems still to be solved that the challenge to our intelligence, skill, and enterprise will keep us busy for many a long day to come.

And the most hopeful fact of all, perhaps, is that we are beginning to see the possibilities to be derived from better bees. The new golden age will come when a group of men with infinite patience and discriminating intelligence will devote themselves to the same science of breeding that has meant so much for other sources of farm production. We have been concerned with races of bees; we need now to concentrate on strains of bees. Admittedly the difficulties are formidable, but the greater will be the achievement if they can be surmounted.

In this new and greater land of promise, overflowing with milk and honey, where one kind of food vies in fierce competition with other kinds of food, it may be small comfort, but stimulating to brotherliness, to reflect that we beekeepers have plenty of company when it comes to facing problems that are hard to solve. They are the common problems of us all, and team work will help mightily in their solution.

♦

QUEEN INTRODUCTION

(Continued from page 217)

Also, where the less drastic cage method of introduction works satisfactorily, it should be used instead of the carbolic method, especially when making new swarms. In this case bees ought to be kept at home instead of driven out.

But when the time comes that bees get cussed and kill everything you give them when you try to be polite, just show them how it feels to be without a home and with nothing to eat. They will then appreciate housekeeping even as you and I.

Middlebury, Vermont.

Italian Bees and Queens
Also Caucasian Queens for 1941
BOOKING ORDERS NOW.
Write for prices.
R. E. LaBARRE, Box 172
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ORDERS WANTED
2-Lb. Pkg. with Queen $2.00
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Young Laying Queens .60
High Quality—Dependable Service.
J. F. McVAY :: JACKSON, ALABAMA

HAVE YOU TRIED CAUCASIANS?
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Untested Queens, 75c ea.
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$1.00 Cackle & Crow, The Poultrypaper
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$ .50 Rabbit Monthly (Comm.)
$1.00 American Fur Breeder
$1.50 American Pigeon Journal
$1.50 Pigeon News
$1.00 Angora (Goat) Journal
$2.00 Goat World
$1.00 Belgian (Horse) Journal
$1.00 Hog Breeder (all breeds)
$ .50 Spot. Poland China Bulletin
$1.00 Amer. Hampshire Herdsman
$1.00 Sheep Breeder
$1.00 The Sheepman
$ .50 Wool Sack (comm. wool growers)
$ .50 Sou. California Rancher
$1.00 American Cattle Producer
$1.00 Red Polled (Cattle) News, 2 years
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$1.00 American Bee Journal
$1.00 Beekeepers Item
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STATEMENT OF THE OWNERSHIP MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912 AND MARCH 3, 1933.

Of American Bee Journal, published monthly at Hamilton, Illinois, for April 1, 1941.

STATE OF ILLINOIS, } ss.
County of Hancock, }

Before me, a notary public in and for the state and county aforesaid, personally appeared J. C. Dadant, who, having been duly sworn according to law, deposes and says that he he is the business manager of the American Bee Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the name and addresses of the publishers, editors, and business managers are:

Publishers: American Bee Journal, Hamilton, Ill.

Editors: G. H. Cale, Hamilton, Ill., Frank Pellett, Hamilton, Ill., M. G. Dadant, Hamilton, Ill.

Business Managers: M. G. Dadant, Hamilton, Ill., J. C. Dadant, Hamilton, Ill.

2. That the owners are:
H. C. Dadant, Hamilton, Ill.
J. C. Dadant, Hamilton, Ill.
V. M. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
C. S. Dadant, Hamilton, Ill.
R. A. Grout, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
R. H. Dadant, Hamilton, Ill.
Louisa G. Saugier, Hamilton, Ill.

3. That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) J. C. DADANT,
Business Manager American Bee Journal.

Sworn to and subscribed before me this 20th day of March, 1941.

MINNIE S. KING, Notary Public.
My commission expires Nov. 18, 1941.

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2-lb. pkg. with queen		3-lb. pkg. with queen		Queens	
1 to 50	$1.75	1 to 50	$2.25	1 to 50	$ .60
50 to 100	1.70	50 to 100	2.20	50 to 100	.55

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10 Per Cent In Advance Books Any Open Shipping Date You Desire.
GENEROUS OVERWEIGHT PACKAGES WITH THRIFTY YOUNG LAYING QUEENS.
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NOTE: Quotation on 4 pound and 5 pound and queenless packages on request.
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Have stood the test for 30 years, try them, they will please you too. Shipments are being made promptly.

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Untested queens	.60

15% DISCOUNT TO DEALERS.
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Queens	**.50**

We have been 17 years building up a superior strain of honey producers.
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Extra Queens, 50c each; 10 or more, 45c each, postpaid.
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2-lbs. Bees, One Standard Comb with brood, young laying queen	$1.95
2-lbs. Bees, One Modified Dadant Comb with young laying queen	2.35
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Extra Queen	.50
Extra lb. of Bees	.50
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Membership dues $1.00 per year		25 and 70	.75 ea. prepaid

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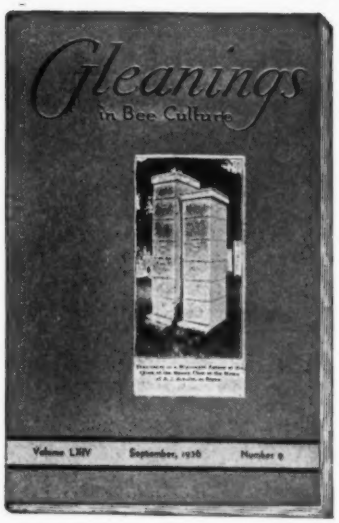

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Are gentle. *HOW GENTLE?* More so than any bees we've ever handled. Good honey gatherers. *HOW GOOD?* They have led in many tests with other races, and were the first bees noticed to show resistance to disease. Any thing else? Yes, we have Mountain Gray Bees for sale, try us with an order.

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Quality Bees and safe delivery guaranteed.

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Choice Bright Italian Queens

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Loose queen packages, 1 to 24, 2-lb. pkgs. $2.40 each; 25 to 50, $2.30 each. 3-lb. pkgs. 1 to 24, $2.70 each; 25 to 50, $2.60 each.

Caged queen prices as follows: 1 to 24, 2-lb. pkgs. $2.10 each; 25 to 50, $2.00 each. 3-lb. pkgs. 1 to 24, $2.50 each; 25 to 50, $2.40 ea.

Queens, 75c each; 25 or more, 65c each.

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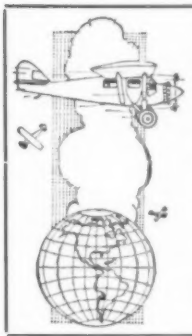

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Prices after May 15th, Bees with Young Queens.

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Queen Bees, 50c each.

Pure Three-banded Italian Bees and Queens. We guarantee safe arrival, pure mating, prompt shipment, no disease and unexcelled quality. The best by test after forty-five years. Wings of queens we clip on request.

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Three-Band Leather Colored Italian

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Package bees with select, untested queens, May 10th or later

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Select untested queens 40 cents each. Lots of 10 35 cents each. 100 to 1000 $32.00 per 100. Prompt shipment and satisfaction guaranteed.

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Package Bees *with* Queen $1.50. Queen *only*, 40c

By this time all wintered over bees are gone so you are assured of young bees only. I have the light three banded Italian very gentle to work with, very hardy and very thrifty, my queens are home bred from selected stock under natural conditions and have ample supply of them.

Health certificate, date, live delivery and satisfaction guaranteed with each shipment.

1 to 9—2-lb. packages, each	$1.60	1 to 9—3-lb. packages, each	2.00
10 on up—2-lb. packages, each	1.50	10 on up—3-lb. packages, each	1.90
Queens 1 to 9 each	.45		
10 on up, each	.40		

PLAUCHE BEE FARM :: Hamburg, La.

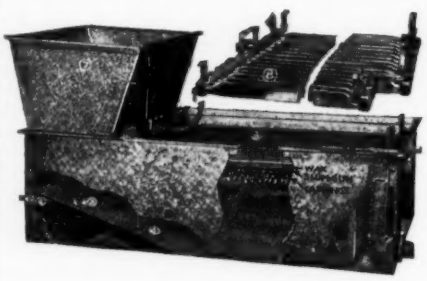
BE PREPARED

Our foundation is made by a process all our own. The heavy cell base gives combs which will be of service for many years to come. This also gives it the quality of non-stretching which is the only assurance of straight combs that every beekeeper admires.

Our thin super is made from the whitest wax obtainable. Give it a trial and you will be surprised how the bees take to it.

Write for our price list today.

GUS DITTMER COMPANY Augusta, Wisconsin



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Success is due to the under the Melter Grid feeding. Send for printed matter.

Have decided that I would like to buy one of your Senior Brand Capping Melters. I used Edwin Stewart's last year and it worked fine. W. X. Johnson, Port Hope, Mich.

Manufactured By

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Against Supersedure and Loss

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Puett's Special Loose-Queen PACKAGES

Genuine 3-Banded Italian Bees & Queens

None Can Be Better Unless There's A Reason.

Here Are Four Reasons:

1. A ready introduced, laying queen selected for egg production, taken from her own colony.
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3. Overheating or chilling in transit is prevented. Bees are never angry nor cross.
4. It is a fool-proof package. Guesswork and installation mistakes are prevented and SUPERSEDURE IS REDUCED TO A MINIMUM.

PRICE SCALE	1 to 11 pkgs.	12 to 50 pkgs.	51 & above
2-lb. Special Loose-Queen	$2.50	$2.30	$2.20
3-lb. Special Loose-Queen	3.00	2.80	2.70
2-lb. Regular Caged-Queen	2.25	2.05	1.95
3-lb. Regular Caged-Queen	2.75	2.55	2.45

For 4-lb packages add 50c to above prices.

♦

Write for illustrated booklet, take a camera trip through our yards and SEE WHAT HAPPENS when packages are being made ready to ship.

♦

The Puett Company

Hahira, Georgia

"She-Suits-Me" QUEENS

Most excellent strain, three-banded stock. One queen **75c**, 3 for **$2.00**. Stamps taken for single queen. Koolairy veil **$1.50** postpaid. SAFIN cage **15c**, ten for **$1.00**.

ALLEN LATHAM : NORWICHTOWN, CONN.

PACKAGE BEES and QUEENS

2-lb. pkg. with queen . . $2.00
3-lb. pkg. with queen . . 2.50
Young laying queen . . .60

Best Quality—Dependable Service

BUCATUNNA BEE CO. ∴ Bucatunna, Miss.

Air Conditioned Bee Hives with "Bee Rite" Pat. Pend.

Ventilating, hive drying, insulating hive covers for healthier bees, more and better honey, larger profits, require no attention. Assembled, ready for use. Repays, many times, small first cost. Prices F. O. B. factory, 8 frame—**$1.45** each; 10 frame **$1.50** each; 11 frame **$1.55** each. Free descriptive booklet.

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ADDRESS:
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The BEST PACKAGE

to be had. About 75% baby bees, 25% teachers.
A good Italian queen raised right.
We try to make you money.
The VICTOR APIARIES, Shepherd, Texas

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Thousands of Rabbits and other Small Stock, Poultry and Birds, Let

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3-BANDED ITALIAN BEES

NOTHING BUT THE BEST

2-lbs. Bees with Young Queen . . $1.80
3-lbs. Bees with Young Queen . . 2.30
Queens, each 50

Satisfaction Guaranteed.
Plantersville, Apiaries, Plantersville, Miss.

(CARNIOLANS EXCLUSIVELY)

We breed only from the best imported queens we can buy, imported from Jan Strgar.
DEMAND THE BEST

Queens, each . . . . . $ .75
3-lb. package 3.15
2-lb. package 2.45

Write for quantity prices.

ALLEN'S APIARIES, AUBURNDALE, FLORIDA

Results Going Strong Count Most!

Bees raised under conditions ideal for high grade stock, at picturesque Picayune, where little artificial stimulation is needed, so both bees and queens are raised under natural conditions. Breeding stock selected for prolificness and honey production; for gentleness and appearance. Four main express and mail trains each day to carry your bees quickly to you. Four per cent extra queens with package orders. AIRMAIL QUEEN SERVICE gets needed queens to you by fast plane to any part of the U. S. or Canada, at no extra cost to you.

These prices will be in effect to late May when they will be lowered. Should good weather or other factors enable us to lower prices before that time, we will refund any amount above quotation at exact time bees are shipped. Order now. No early booked packages will be shipped late.

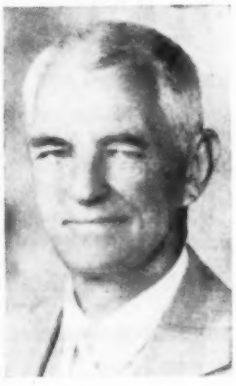
	1 to 5 pkgs.	5 to 25 pkgs.	25 or more pkgs.
2-pound package and queen	**$2.20**	**$2.10**	**$1.80**
3-pound package and queen	**2.85**	**2.75**	**2.35**

Queens, to May 15, 1 to 10, 70c ea.; 10 or more 60c ea. Queens, after May 15th, 1 to 10, 60c ea.; 10 or more 50c ea.

15% booking deposit required. Balance 10 days before shipping date. 2% discount for cash in full with order.

DANIELS APIARIES ∴ PICAYUNE, MISSISSIPPI

BETTER QUEENS



Jay Smith

Our queens are reared direct from the egg without grafting. This insures continuous feeding of the larva from the time it is out of the egg till the cell is capped over without a minute's interruption with the result that all queens are perfectly developed the same as those reared during swarming. This insures long lived queens that produce the bumper crops and there is no premature supersedure. A party in Florida writes: "The 500 queens received from you have given the best satisfaction with no undue supersedure. Some lived **five years.** They are very gentle and good honey getters." But that is near by some may say. Well then here is one from the State of Washington: "I have bought something better than 200 queens from you and am very well satisfied with them and there has been no early supersedure." Here is one from far-away Australia. "Your bees have made beekeeping a new game for me. No better bees ever flew in my yard."

Huber F. Smith

We have hundreds of similar letters. Nearly all queens are reared during a honey flow so we seldom have to feed and when we do, we feed honey as there is no bee disease within many miles of our apiaries. Remember we ship queens every month in the year and can give prompt service. We do not ship package bees but will gladly give you the names of package shippers to whom we furnish queens. We still have on hand a few copies of our book "Queen Rearing Simplified." We have a mimeographed supplement describing our present method of rearing queens direct from the egg. Price of book with supplement $1.50 postpaid. To all who have purchased this book either from us or others during the past two years, will be furnished this supplement free of charge by writing us. Price of queens. **$1.00** each up to 5. In lots of 25, **85c** each. In hundred lots **75c** each. Write for our folder.

Cells like this produce superior queens

Jay Smith & Son, Route 2-A, Fort Meyers, Fla.

GENUINE ITALIAN

PACKAGE BEES AND QUEENS

On The Same Old Basis — *QUALITY — SERVICE — SATISFACTION*

2-lbs. Bees, one Standard comb with Queen .	$2.25	Additional pound of bees or comb	$ .40
2-lbs. Bees, one Modified Dadant comb with Queen	2.45	Queens, each	.40
2-lbs. Bees with Queen [combless]	1.50	After May 20th, queens . .	.35

E. J. BORDELON APIARIES :: Box 33 :: MOREAUVILLE, LA.

BRAZOS VALLEY APIARIES
CAMERON, TEXAS

PACKAGE BEES

BRAZOS VALLEY APIARIES
CAMERON, TEXAS

Your choice of queens . . . **Italian, Caucasian**

A quarter of a century in the same locality, in the same business, with many of the same customers is my record.

From one package to a truckload will receive my prompt attention.

My motto through the years: I will expect to do business with you again.

2-lb. package bees with young select laying queen, 1 to 5, **$2.00 each;** 6 or more, **$1.75 each.**
3-lb. package bees with young select laying queen, 1 to 5, **$2.50 each;** 6 or more, **$2.20 each.**

"YOU CAN PAY MORE BUT YOU CANNOT GET BETTER BEES OR FAIRER TREATMENT"

H. E. GRAHAM :: :: CAMERON, TEXAS

? WERE YOU SATISFIED

with the packages and queens you purchased last season? Was the service as good as you have a right to expect? **IF NOT,** (get your check book)

	2-lb. Pkg.	3-lb. Pkg.	Queens
1 to 25	$2.15	$2.85	$ .70
26 to 99	2.00	2.65	.65
100 up	1.85	2.50	.60

(No disease. Safe arrival and satisfaction guaranteed.)

WEAVER APIARIES, NAVASOTA, TEXAS. **ITALIANS -- CAUCASIANS**

When You Want QUALITY at LOW COST Look For This Sign

KELLEY—"The Bee Man"

Depend on Me

I exert every effort to see that your order is shipped the same day as received. We have carloads of supplies packed, plenty of wax and lumber and a large crew of experienced workmen manufacturing more bee supplies daily. Let us show you what **RUSH** means.

The WALTER T. KELLEY CO., :: PADUCAH, KY.

JUST ACROSS THE OHIO RIVER FROM ILLINOIS

CROP AND MARKET REPORT

Compiled by M. G. DADANT

For our May Crop and Market page we asked reporters to answer the following questions:

1. How much honey left on hand in your area?
2. Is there more or less than at this time last year?
3. How are colony conditions?
4. Are moisture and honey plant conditions better than at the same date a year ago?

Honey Left on Hand

Without a question there will be much less honey left on hand with the new crop coming on than there was a year ago. We might say that from the Rocky Mountains east, there will be no honey left. In fact white honey is an extremely scarce article and is being purchased at considerable advances in price where stocks are offered. We believe there will be a dearth of white honey to fill necessary orders by the time the new white crop is available.

The only section in which we have reports of honey left in any quantities are a few cars in Colorado and quite a large amount, perhaps three or four million pounds, in Arizona and southern California, also some few cars in the Northwest. However, all of these are amber honeys which have not been meeting the requirements of bakers and other users in the central West and East.

If the plan now being considered of including amber honey in the surplus food distribution materializes, the situation would be greatly relieved.

Stocks Compared to a Year Ago.

As reported above, the stocks left on hand are far less than they were a year ago and this refers to Canada as well as the United States and even refers to those sections in which there is still a considerable quantity of amber honey left on hand. In Arizona and southern California, the amount left does include some of the 1939 as well as 1940 crop, as a year ago several of the earlier crops remained unsold.

Unfortunately in the amber grades there has not been very much appreciation in price even though sugar prices have advanced about one cent. This should, however, be reflected in the amber grades as well as the white as the season advances.

Colony Conditions

Throughout the southeastern states, colony conditions have been retarded by cool weather and particularly by a lack of pollen so that the complaint has come in from honey producers as well as the breeders of bees that it has been difficult to build the colonies up to normal strength. Necessarily this makes the difficulty more pronounced in getting sufficient bees to fill the enormous demand for packages this year and it also means that the earlier build-up and the early part of the crop in the Southeast has been partly lost. This does not refer quite so much to Louisiana where conditions have been more normal although cool weather has, to some extent, interfered.

In the far northern sections, as well as New England, the season has not been sufficiently advanced to give a definite idea but the condition of bees is far better than it was a year ago and without a doubt the losses are going to be very much less than they were during the 1940 spring when extremely heavy losses occurred in some instances.

We do find reports of colonies short of stores and where the fall crop was not good, in some instances, the colonies have not come through in the best of shape. This refers, to some extent, to northern Minnesota and similar areas when fall conditions were not satisfactory.

In the main, however, the colonies are coming through with very little loss and are building up very satisfactorily although using up their stores at a rapid rate as a consequence.

In California colonies have been very much retarded on account of the cold, rainy weather as California and the west coast have had more rain than in nearly twenty years.

Condition of Plants

Starting at Maine and going through the entire eastern section including the Atlantic seaboard, the condition of plants is excellent. We find in the South, however, that plants have been retarded by the cold spring and as a consequence, together with the lateness of bees in gathering pollen, this has made for a retarding of the early crop. Warm weather, however, should correct much of this.

Throughout the central areas and extending into the plain states, honey plants are in far better condition than they were a year ago. In fact we might say they are almost abnormal. This, combined with the large amount of soil-building, liming, etc. called for by the government plans, should make for an increased quantity of blooming legumes which should add to the honey crop.

There has been some lack of moisture in the central southern states and also in northern Wyoming and Montana with a question as to whether Idaho, also, will have its share of the moisture. Otherwise, moisture conditions are above the same period of 1940 and conditions do look propitious. In California particularly they have had the most rain in forty years and it has even gotten to the point where a question arises in the beekeeper's minds as to whether the rains will stop in sufficient time to give an orange flow. The early orange flow has already been hurt by extensive rain. However, such rains in the unirrigated areas undoubtedly will bring on the desert bloom, and sage and other plants should, as a consequence, yield above average thus making up for any shortage in the orange bloom. As a matter of fact, it looks like California and Arizona are due for a bumper crop if weather conditions are satisfactory from now on.

Summary

From reports above, the writer has indicated a far better than normal conditions with less honey on hand than usual. Some modification on honey prices naturally seems a dubious point under present conditions. However, the shortage of white honey which has developed together with the fact that granulated sugar has already advanced one cent per pound and undoubtedly will advance more as the season advances does show that the possibility of an excess of honey production may be largely conteracted by the firming of general conditions and the stiffness of the sugar market.

As we have many times said before, our honey prices are not dependent so much upon honey production as they are upon business conditions, the price of competitive products, and the attitude of the beekeeper himself.

The past season is an example. With the short crop in 1940 honey prices should have advanced and held at a very nice position. However, the apparent anxiety of beekeepers to sell at most any price, combined with the effort on the part of some of these beekeepers to dispose of their honey themselves at ruinous prices in small pails, combined also with certain competitive practices on the part of some large packers, made for ruinous prices on honey which had no justification.

Sooner or later, we beekeepers will have to realize that we are our own best friends or our own worst enemies.

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn.

HONEY WANTED Cars and less than cars Mail Samples
C. W. AEPPLER CO., Oconomowoc, Wisconsin

EXTRACTED HONEY Bought and Sold
Iverson Honey Company
201 North Wells St., Chicago
Reference: First National Bank of Chicago

THE MARKET PLACE

BEES AND QUEENS

PACKAGE BEES and QUEENS. Service. Satisfaction. Sternenberg Bros., Lockhart, Texas.

CAUCASIAN PACKAGE BEES. Reduced price but same high quality. Long tongued, gentle, prolific, dependable workers. 2-pound package bees with queen $2.00; 3-pound with queen $2.50. Safe arrival and satisfaction guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

GOOD PACKAGE BEES and QUEENS for 1941. We have supplied leading beekeepers for many years and of late years have not found it necessary to advertise a whole lot even though we have one of the largest, best equipped queen and package establishments in the South. If you want the utmost satisfaction from your packages and queens write me. Three banded Italians only. No disease. H. C. Short, Fitzpatrick, Alabama.

PACKAGES WITH INTRODUCED LOOSE QUEENS. I guarantee against premature supersedure. Increased output allows reduced prices. Free folder. A. O. Smith. Mount Vernon, Ind.

OVERWEIGHT PACKAGES and young queens at a price you can afford to pay. I can fill your early orders. D. P. Green, Deland, Fla.

THREE BANDED Italian bees and queens. Extra good honey gatherers and gentle to handle. Satisfaction guaranteed. Alamance Bee Company, Graham, North Carolina.

ONE 75c three band Italian Queen free to every new customer. L. H. Wagoner, Elon College, N. C.

GOLDEN ITALIAN QUEENS 50 cents. 2-lb. packages with queen $2.00. Loehr's Breeding Farm, Caldwell, Texas.

UNEXCELLED QUALITY Italian bees and queens. 2-lb. package with queen $2.00; 3-lb. package with queen $2.50. Queens 60c. Twenty up 5% discount. Satisfaction guaranteed. Sowhatchee Apiaries, Hilton, Ga.

EXTRA YELLOW Italian queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested, 75c each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Rt. 2.

GOLDEN QUEENS, excellent quality. Hardy, gentle, productive. Health certificate, satisfaction garanteed. 75c. O. E. Brown, Rt. 1, Asheboro, North Carolina.

QUEENS! QUEENS! QUEENS! Excellent three-banded Italians at reasonable prices. Geo. E. Smith, Rt. 2, Yuba City, Calif.

GOLDEN ITALIAN bees and queens. Select untested, 75c each any number. Carolina Bee Farm, Graham, N. C.

CARNIOLAN QUEENS—Selected untested queens 60c each. They are as fine as can be had in America. Splendid for comb honey production and great honey getters, gentle and disease resistant. Reared in queen yard twenty miles from our Italian. M. C. Berry & Co., Box 684, Montgomery, Ala.

EMPIRE STATE strain Italians. Bred for honey production. 60c each. Coggshall & Son, Groton, N. Y.

QUEENS and three frame nukes. Bred and selected by New Jersey Agricultural Experiment Station for seventeen years. No bees better. Queens 75c each. $8.00 the dozen. Larger quantities subject to correspondence. Three frame nukes with queen $3.15 at the apiary. Bring your hives and get 'em. E. G. Carr, Pennington, N. J.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other reference with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspectors. Conditions should be stated to insure that buyer is fully informed.

CARNIOLAN and CAUCASIAN package bees, April and May delivery . 2 lb. pkg. $1.75; 3 lb. pkg. $2.25. Untested queens 50c each. Safe arrival. Tillery Brothers, Rt. 4, Greenville, Ala.

HONEY FOR SALE

CHOICE EXTRACTED CLOVER HONEY in 60's. R. C. Bish, Successor to Moore Apiaries, Tiffin, Ohio.

HONEY FOR SALE—We buy and sell all kinds, carloads and less. The John G. Paton Company, Inc. 630 Fifth Avenue, New York, N. Y.

FANCY TUPELO HONEY for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Florida.

GOOD EXTRACTED CLOVER in 60's 6c. Amber 5½c. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Fancy, well ripened, white sweet clover honey in 60-lb. cans by the case or carload. Extra good quality. Dadant & Sons, Hamilton, Ill.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

COMPLETE LINE comb and bottled honey. Pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

ORANGE, Palmetto and Mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE CLOVER extracted 7c. Light amber 6c. Amber or buckwheat 5½c. C. B. Howard, Geneva, N. Y.

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CHOICE New York clover extracted in new 60's. Emery Horton, Holcomb, N. Y.

IOWA white extracted honey in new sixties. One can or a carload. Satisfaction guaranteed and the price is right. Sample ten cents. Harry C. Kirk, Armstrong, Iowa.

WE BUY AND SELL ALL KINDS COMB AND EXTRACTED CARLOADS AND LESS. H. BLITZ, P. O. BOX 3452, PHILADELPHIA, PA.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honey. We stock all varieties. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

HONEY FOR SALE—Any quantity, all varieties. B-Z-B Honey Company, Alhambra, California.

HONEY AND BEESWAX WANTED

ALL GRADES extracted honey wanted. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th Street, Detroit, Michigan.

WANTED—Chunk comb and extracted honey. For sale good used 60 lb. cans. Clover Bloom Honey Co., Oklahoma City, Okla.

CASH FOR YOUR WAX the day received. Write for quotations and shipping tags. Walter Kelley Co., Paducah, Kentucky.

WANTED—Large quantities of chunk comb in shallow frames; also section honey. Central Ohio Apiaries, Inc., Millersport, Ohio.

WANTED—Carlots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

5 TON white clover honey. Lose Bros., 206 E. Jefferson, Louisville, Ky.

FOR SALE

FOR SALE—We are constantly accumulating bee supplies slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

FOR SALE—We accumulate bee supplies at our warehouses, slightly shopworn and fully serviceable, but discontinued for lack of sale. Write for complete bargain list. G. B. Lewis Company, Watertown, Wisconsin.

10 COMPLETE observation hives, 30 incomplete, cheap. Lose Bros., 206 E. Jefferson St., Louisville, Ky.

NEW 20 colony outfit. $50 Hilbert Honey Hunk Extractor $35. ¼ H. P. motor, 95 gal. tank. Electric plane and other equipment. C S. Sowder, Morris, Minn.

USED EQUIPMENT—72 empty hives, 230 comb frames, covers and bases. Cheap. State inspected. Lauri Wauranaja, 260 South 1st Ave. E., Duluth, Minnesota.

200 COLONIES bees in 10 fr. hives, as I wish to keep only Dadant size. H. A. Sundean, Crookston, Minn.

FOR SALE—Ten colonies of bees and equipment on account of retiring. Standard, ten frame painted hives. State inspected, guaranteed no disease. Vincent Glazawski, 7045 N. Newark Ave., Chicago, Ill.

100 TEN-FRAME wood-wire excluders at 25c. 200 8-fr. supers for 4¼x1⅞ sections, complete with holders and separators, at 25c. 200 8-fr. bodies empty at 25c. 50 8-fr. ventilated wood covers at 20c. 50 8-fr. bottoms at 15c. One 4-fr. Root automatic reversible extractor with 12 inch pockets and friction power gear $35.00. One Root capping melter (for stove heat) $5.00. One 3 in 1 uncapping stand $12.00. All supers and bodies dovetailed. Everything in fine condition. No disease. Oliver Meyer, Preston, Iowa.

125 TWO-STORY 10-fr. colonies Italian bees with two deep extracting supers each, or will consider selling my whole outfit 150 colonies with six or seven hundred extracting supers, extractors, honey tanks, etc. Bees guaranteed free from disease. George Reints, Lindenwood, Ill.

75 COLONIES of good clean Italian bees in 8-frame hives complete with 1 extra extracting super in good strong condition ready for a honey crop. State inspected. $3.50 per hive. Richard Biegert, Loretto, Minnesota.

100 HEALTHY colonies Italian bees, adaptable beehives, comb honey supers, $300. Extractor, other equipment, supplies. Mary Wood, 217 Walnut St., Peeksville, N. Y.

200 2-story 10 frame colonies of bees. Also queens, nuclei, packages. No disease. Route 1, Box 227 A, St. Petersburg, Florida.

922 LBS. beeswax F. O. B. Wabash, Ind. Rettig Supply Co.

FOR SALE—3-frame nuclei full of sealed brood and bees, $2.00 each. F.O.B. Gridley. Queens 75c. Health certificate. M. E. Baker, R. No. 1, Gridley, Calif.

SUPPLIES

THE ONLY COMPLETE LINE of wax rendering equipment ever offered—the "Perfection" line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

COMB FOUNDATION at money-saving prices. Plain, wired, and thin section. Wax worked at lowest rate. Combs and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

CUT COMB HONEY cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Mich.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
Beekeepers Item, San Antonio, Texas.

LARGE CASH SAVINGS can be made by letting us work your wax into either wired or plain foundation. -Large independent factory manufacturing a complete line of bee supplies including extractors, etc. Selling direct saves you the agent's profit. Quick shipment from large stock. Large free catalogue explains everything. Walter T. Kelley Co., Paducah, Kentucky.

PORTER BEE ESCAPES are fast, reliable, labor savers. R. & E. C. Porter, Lewistown, Illinois.

WAX WORKED into medium brood foundation for 15c pound, 100 pounds $10.00; thin super 22c. Medium brood foundation, 10 lbs. $4.50. Fred Peterson, Alden, Iowa.

WRITE FOR CATALOGUE. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

WANTED

WANTED—Honey pump, with reduction gear. Thos. Atkinson, Route 5, Omaha, Nebraska.

WANTED—Large extractor. Irvin Klaassen, Whitewater, Kansas.

WANTED—Ten frame standard bodies or supers with drawn combs. Walter Roose, 1627 Main St., Sac City, Iowa.

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CIDER TIME, Free, How to keep cider sweet, make vinegar quickly, money from cull apples. Presses, Graters, Filters, Supplies. Honey and sweet cider make an excellent roadside combination. PALMER BROS., COS COB, CONN.

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8 BASSWOOD seedlings, or 10 RUSSIAN OLIVE,—2 foot, or 6 PINK HONEYSUCKLE shrubs, or 8 JAPANESE BARBERRY, or 25 CARAGANA (hedging)—1 foot, or 3 transplanted BASSWOOD 3 foot, or 2 transplanted PUSSY WILLOW (early spring pollen) 3 foot,—nectar producers. Postpaid for $1.00 bill. Checks require 10c exchange. Local Lewis-Dadant dealer. Nicollet County Nursery, St. Peter, Minn.

NURSERY CATALOG—70 hardy fruit varieties, also basswood, Vikla Nurseries, Lonsdale, Minnesota.

POSITIONS AND HELP WANTED

WANTED—Two experienced helpers. We operate 3500 colonies. State age, family, weight, height, experience, reference and salary expected. Board and room available at $30.00 per month. OLD TAYLOR HONEY CO., HARLAN, IOWA.

WANTED—Helper to work bees. State age, experience, wages expected, room and board furnished. E. E. Salge, Strandquist, Minn.

EXPERIENCED beeman with good habits. Give experience and wages expected. J. W. Hardy, Huntley, Montana.

MISCELLANEOUS

MICHIGAN BEEKEEPER. Nation-wide circulation. Published monthly. 75c a year. MICHIGAN BEEKEEPER, Rt. 3, Lansing, Michigan.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents, stamps. Membership of the Club, including subscription to the paper 10/6. The Apis Club, The Way's End, Foxton Royston, Herts, England

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The proboscis of the ordinary bee is too short to reach red clover nectar. In order to overcome this difficulty A. F. Gubin, of the Beekeeping Institute (U.S.S.R.) applied Academician Pavlov's theory of conditioned reflexes to the bee with the result that he created a clover reflex. The bee was fed a sugar syrup containing concoctions from clover honey, and finding it much to its taste, it began to seek out the clover, sparing no effort to obtain its nectar.

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LEATHER COLORED ITALIAN QUEENS—SUPERIOR STOCK
50c each
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Buy your Italian bees and queens from
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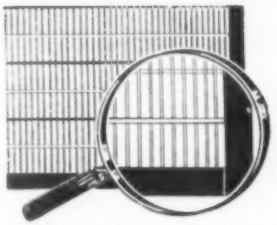
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BEES and QUEENS
Highest quality, young bees, good workers, large capacity
PRICE
2-lb. pkg. with queen - $1.90
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Live delivery, prompt service and satisfaction guaranteed.
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PACKAGE BEES
Best in the West by every test.
Free circular and price list.
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Italian Bees and Queens
Try our full weight packages of young bees and queens and we are positive that you will be satisfied. We ship comb or combless packages with either loose or caged queens.
2-lb. Packages with queen . $1.75
3-lb. Packages with queen . $2.25
We guarantee safe arrival and no disease.
MAYEUX BEE FARM :: HAMBURG, LA.

Mott's Northern Bred Italians
Loose queen bee packages, 2 lb. $1.90 3 lb. $2.40. Mott's strain in the south. Northern bred queens, $1.00; 2 or more, 75c each Guaranteed purely mated or replaced. Virgins (day old queens) 3 for $1.00. Breeders, $3.00, $5.00, $10.00. Satisfaction guaranteed. U. S. A. VALUE.
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Garon's Progeny-Test Three-Banded Italians

Garon's Daughters of Stock Bred for Resistance to A. F. B.

Our First Line—Progeny-Test 3-Banded Italian Bees are REAL MONEY MAKERS. They have never failed those who have bought them.

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To May 10th	2-lb. Pkg.	3-lb. Pkg.	Queens	After May 10th	2-lb. Pkg.	3-lb. Pkg.	Queens
1 to 25	$2.10	$2.75	$ .60	1 to 25	$1.80	$2.30	$ .40
26 to 99	1.90	2.55	.55	26 up	1.75	2.25	.35
100 up	1.85	2.50	.50				

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Better bred queens :: 3-banded Italians

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We are prepared to handle your rush orders. Don't hesitate to send them to us. Raising queens and shipping packages is our only business. Not a sideline. We have left no stone unturned to give you the best queens obtainable and good, honest, well prepared packages. Give us a trial and be among our many satisfied customers.

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3-lb. packages with queens	2.25 each
4-lb. packages with queens	2.75 each

After May 15, packages 25c less. After May 20, queens, 3 for $1.00.

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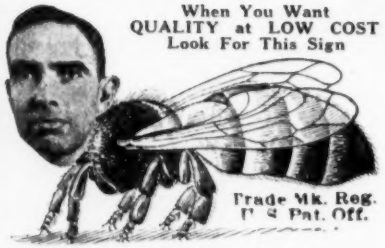

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BEES *and* QUEENS

from Our Louisiana Bee Farm

2-pound swarms with young queens $2.00
3-pound swarms with young queens 2.50
10 or more 10c less each

Queens, 50c each—10 for $4.50
Queens shipped daily from Paducah.

THE WALTER T. KELLEY CO. ❖ ❖ PADUCAH, KENTUCKY
JUST ACROSS THE OHIO RIVER FROM ILLINOIS

Low Prices *for* 1941

on the finest bee supplies and foundation made. Send for our price list. Ship us your old combs and cappings for rendering into wax. Let us work your wax into comb foundation. This means quite a savings to you. We are always buying beeswax, also extracted or comb honey. *Write us . . .*

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JENSEN'S

Bees, Queens and Service

ARE DEPENDABLE

Our outfit is equipped and so balanced to give your orders that prompt, personal attention; no relays or delays. When you order from us you know you will get queens and bees of our strain "Magnolia State" Italians. Our high standard of quality, everything under our personal supervision. No order too large or too small for prompt service.

Packages with Selected 1941 Queens

	Two pound	Three pound	Queens
1- 25	$2.10	$2.75	$ .65
26-100	1.95	2.55	.60
101-500	1.80	2.35	.55

Loose-Queen Packages add 10c per package. Booster Packages (queenless) deduct price of queens. Daughters of stock bred for resistance to A. F. B. Make reservations.

JENSEN'S APIARIES
MACON, MISS., U. S. A.

KNIGHT'S

Package Bees & Queens

Leather Colored Italians

The best honey gatherers.

Prices Including Queens

	2-lb. Pkg.	3-lb. Pkg.	4-lb. Pkg.	5-lb. Pkg.
1 to 9	$2.10	$2.70	$3.30	$3.90
10 to 24	2.00	2.60	3.20	3.80
25 and more	1.80	2.35	2.95	3.55

Queenless packages, deduct 65c

After May 15th: *2-lb. packages including queens, $1.50, 3-lb. size, $2.00. 4-lb. size, $2.50. Any quantity. Queens, 50c each. No charge for clipping.*

JASPER KNIGHT
HAYNEVILLE, ALABAMA

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What is important Now?

PRODUCTION

People everywhere will want foods. Let us produce—then contribute to the large sales promotion program and keep honey high on the crest of large demand. This is our opportunity to greatly enlarge the use of honey.

Will you profit? Are you prepared with knowledge of better beekeeping and with needed supplies?

Root quality supplies will be cheapest in long use. Root service will respond quickly to your needs.

Write us about your needs. Let us quote on your list. Ask for Root's 1941 catalog.

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THE POSTSCRIPT

Orval R. Bassett, of Raymond, Washington, has apiaries back in the hills where fireweed grows. These logged off and burned over areas are still abundantly supplied with big game. Last season he had ten hives upset by elk which were curious and ran amuck when the bees resented their visits. A neighboring beeman lost twenty hives which were torn to pieces by bears. Now they have installed electric fences with hot shot batteries which will no doubt surprise the bears or the elk when they approach the apiaries.

Fireweed is the source of wonderful crops of white honey for a few seasons following a forest fire. It does not last long, however, and within a few years only a scattering of the plants remain. The beemen in the fireweed country are thus faced with the necessity of following the fires to new locations rather frequently. In the years when the pine forests were being cut from northern Michigan there was a great deal of interest in the production of fireweed honey in that region. Now they are getting honey from milkweed, wild raspberry and clover in the same areas where fireweed was once the main crop.

G. F. Pearcey, of British Columbia, tells of a field of sainfoin that has remained for fifty years at Westwold. This certainly indicates that the plant is entirely suited to climatic conditions of that region. It is my understanding that winters are rather severe in that area and that summers are subject to extended periods of dry weather. In view of the success of this particular field it is surprising that so little is known of sainfoin in either the United States or Canada. Legumes in common cultivation are rather short lived here. Red clover rarely lasts more than two years and alfalfa from five to ten. A hay crop from a field that has been down for fifty years sounds reassuring.

In this country we know the fuchsia as a tender house plant but in the mild climate of Connemara it is reported as a common shrub which along the coast yields an abundant supply of very white honey from August until November. The honey is said to have very little flavor. Gardeners in this country have been much interested in the appearance of a hardy fuchsia which lives over winter in the open. It will be interesting to learn whether the bees find this one as attractive as the wild plants mentioned in the January 23 issue of British Bee Journal.

An inquiry comes to this desk as to whether the Maackia tree, which is recommended by the New Jersey College of Agriculture, is a source of honey. It is commonly known as Manchurian yellowwood. Can any of our readers who are familiar with this tree tell us about its value to the bees?

An interesting letter comes from Ian Roy, of Greenock, Scotland, who gossips about a number of things of interest to beemen. Speaking of a cross colony of bees he compares them to "a mad cat with a toothache." Regarding the bombing, he says: "The war is a bit of a pain but we are very full of hope. Things are a bit out of plumb but we have enough food to keep us in good trim, plenty of clothing, etc., so why worry." Considering how much we worry here in America with the ocean between us and the war zone, we wonder how our friends in the belligerent countries can be so calm about it all.

Numerous inquiries have come to us as to where seed of the new Melana sweet clover can be obtained. We do not know of any source of supply in this country. The plant originated at the Forage Crops Laboratory, Saskatoon, Saskatchewan, Canada. A letter addressed to them will probably bring information as to where it can be obtained in Canada.

The earliest recorded mention of Indian corn or maize was in the sacred book of the Quicke Indians of western Guatemala. It is of interest here because in the account of the land of divided waters, Paxil or Cayala, they found also many fruits and honey. This "most excellent land, so full of good things" is supposed to have been in what is now the Mexican province of Tabasco. It is probably the first recorded reference to honey in the western world. The honey must have come from stingless bees since our honeybee was brought from Europe at a much later date.

Some of our readers are a bit curious to know more about Glenn O. Jones, who has recently begun writing for the bee magazines. He is vice-president of the Iowa Beekeepers Association; a postal clerk in the Atlantic, Iowa, post office, and keeps bees as a side line. He takes his bees seriously, however, and secured a return of about $8.00 per colony last season in spite of the low wholesale price of honey. Jones is a skilled worker with tools and has made some beautiful furniture. Once you come to know him you will find him an interesting chap.

T. J. Mannex, writing from New Zealand in February, reported the season just closing has been quite good and that the honey being marketed under state control is bringing 12 cents per pound for best white clover. In contrast the price which similar honey brings in the U. S. A. seems extremely low. Something wrong with our methods in this country.

From England comes suggestions about handling sainfoin. One becomes enthusiastic about the plant from reading the communication: "In this country there is no plant I can think of which yields honey so certainly. When in full bloom, honey literally pours from it and of very fine quality."

"For hay all sainfoin should be cut about one week after the flowers come out. The raising of sainfoin seed requires great care, as if mowed too dry, the seed is liable to drop off."

From our limited experience with small plots in the test garden we are enthusiastic about sainfoin. The bees have visited the flowers eagerly from the time the first ones have opened until the last have faded. We are glad of the above note from our English correspondent.

David Scholes writes from Victoria, British Columbia, under date of March 19, to say that plum trees have finished blooming and that his strongest colonies are storing surplus. Here we do not expect plums to bloom until late April. Although he is much farther north, spring comes six weeks earlier due to the influence of the Pacific Ocean.

G. A. Pauli, of Pueblo, Colorado, notes a close relationship between nectar secretion in alfalfa and the crop of seed. When the nectar flow is poor little if any seed is set, whereas when alfalfa blossoms yield nectar freely an abundance of seed is set. He has long contended that the beekeeper can tell more about the seed prospect by the behavior of the bees than the farmer is likely to observe.

From Oregon comes a report of a test made by Assistant County Agent Eddicott, of Malheur County. Fifty flower heads of ladino clover from which all bees were excluded produced only 17 seeds, while fifty heads to which the bees had access yielded 2362 seeds. Thus more evidence accumulates as to the importance of the part that bees play in our agricultural economy.

FRANK C. PELLETT.